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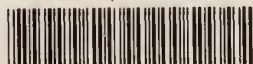
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BUREAU OF LAND MANAGEMENT
AUTOMATED LAND AND MINERAL RECORD SYSTEM
INITIATION PHASE DOCUMENTATION
AUGUST, 1983

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Table of Contents

<u>Section</u>	<u>Title</u>	<u>Page</u>
0	Project Summary for Automated Land and Mineral Record System	1
	I. Introduction	1
	II. Background	1
	A. Statement of Problem/Need	
	B. Goals/Objectives	
	C. Related Automation Efforts	
	III. System Description	6
	A. Overview	
	B. Functional Characteristics	
	C. Design Concepts	
	D. Products/Services	
	E. Equipment and Configuration Issues	
	F. Schedule of Events and Milestones	
	IV. Project Management	17
	A. ALMRS Approval/Authorization	
	B. Project Direction and Administration	
	C. Organizational Roles	
	D. Technical Responsibilities	
	V. Agency Coordination	20
	VI. Resource Requirements	21
1	Development Project Proposal (DPP)	22
2	Project Team Administration	23
3	Data Systems Request (DSR)	25
4	Requirements/Feasibility Study	26
5	Appendices	

SECTION 0

Project Summary For The Automated Land And Mineral Record System (ALMRS)

I. INTRODUCTION: ALMRS will be comprised of automated case recordation, land description, status and geographic coordinate data on all land where BLM has a surface or subsurface management interest. The system will be designed in increments to allow for logical progression from a manual to fully automated system. This will enable BLM to retire the Historical Index, Master Title and Use Plats (MTP). It will produce the Serial Register Page (SRP) for active cases along with other tabular and statistical reports. When fully implemented, the system will contain data for approximately 46,000 townships. This is expected to be completed by FY-1991. The automated system will be designed to be fully interactive for daily inquiries, data corrections and minor updates; however, overnight batch processing will be the rule for the majority of data entry and file updating. ALMRS is expected to have a functional life span of 30 years. This system will greatly improve the labor intensive present manual system through faster case processing, adjudication, automated program summaries, faster service to clientele, preparation of Simultaneous Oil and Gas lists and other lists. Phase I, fully operational at present, accommodates most active land and mineral cases types although initial emphasis is on oil and gas activity. Phase II includes entry of all relevant legal land description data and existing cases affecting the current status of Federal land and mineral rights to support development of automated adjudication aids. Phase III is distinguished by automation of geographic coordinate position data for legal land description boundaries. This provides for additional automation of adjudication processing and visual displays of complete or selected status now shown on the MTP, use plats and tract book plats. Contractor services may be used to perform some segments of the work. Contractor participation is reflected on the various system planning charts where such services could be utilized.

II. BACKGROUND

A. Statement of Problem/Need

The Land Status Records System is the foundation of the Bureau's resource program activities. The present manual system is a paper record system comprised of many components and subsystems which transcend a number of organizational units. This system is used by Lands, Minerals and other resource program offices of the Bureau of Land Management, other agencies (e.g., U.S. Geological Survey, U.S. Forest Service and U.S. Fish and Wildlife Service) and the private sector.

The users of the system are located nationwide, but the up-to-date data is only available at BLM State Offices in manual format and by manual access methods. The users are having difficulty in accessing, summarizing, and interpreting data by area, case type and case actions. Use of title rights and use authorization data (status) for case processing by other resource programs require time-consuming manual searches of records. Some of the specific problems presently being experienced are:

- Data is not always accessible to users especially when there is more than one user desiring access to the same document.
- The present manual system is not economical in terms of work level and productivity.
- There is an ever-increasing space requirement for the use and maintenance of the manual records resulting primarily from increased land and mineral activities.
- Interpretative quality of records is deteriorating.
- Resource data impacting the availability/nonavailability of public lands is not now displayed on present land status records.
- The deterioration of archival records resulting from constant use and the normal aging process.
- The delay in response time for case processing which contributes significantly to case processing backlogs Bureauwide.
- The delay in providing summary data to BLM managers, other agencies, and the public.
- The current need for training resulting from a heavy turnover of personnel in records sections is not being met, largely due to funding constraints.
- The process of updating and maintaining the manual records is slow.
- Only on-site (at the State Office) inquiries of data (mail and telephone) are possible.
- Bureauwide reports which rely largely on manual or paper record systems are extremely costly and some are not economically feasible.

- The manual process tends to breed tedious and duplicate tasks.
- Does not provide land description, status and position data in the variety of formats often required.

B. Goals/Objectives

The goal of the project is to develop and implement an automated data base of land status and survey information to provide the Bureau with a more effective and efficient system to support its resource program activities and to improve service to the public.

This plan provides for alphanumeric data entry, update and retrieval from all BLM offices that process land and mineral cases. Graphics data entry, update and retrieval capabilities are provided to all State Offices and selected high activity District Offices. All BLM offices are provided with the capability to retrieve and display both alphanumeric and plat graphic data.

ALMRS will resolve the present problems or deficiencies in the manual land status records system through accomplishing the following objectives:

- Provide secure, accurate and consistent data.
- Provide efficient and improved accessibility to a complex set of land status records.
- Provide economies in terms of work force level and productivity.
- Decrease space requirements to house status records in an era of increasing lands and minerals case activity.
- Decrease rate of records deterioration due to use and age by providing access through automation.
- Reduce response time for case processing.
- Reduce response time in providing summary data to BLM managers, other agencies and the public.
- Provide current records data at locations other than the BLM State Office.
- Provide for faster updating and maintenance of status records.

- Eliminate tedious and duplicate tasks.

C. Related Automation Efforts

The Bureau began investigating the option of automating resource records several years ago. From June, 1974 to April, 1975, the IBM Corporation (under contract) and a counterpart BLM team went through a systematic study to develop a long range plan for statisfying the Bureau's information needs. The Strategic Plan for Information Systems Management was constructed on that basis. This and several other efforts provide a technical foundation for the present ALMRS proposal and are briefly described below.

1. Strategic Plan

The Strategic Plan was designed to guide BLM into a comprehensive and integrated information system. Also, it provided a basis for more informed decisions about requirements, the management of data, the use of remote sensing technology and the acquisition of information systems hardware and software. Four of the seven Strategic Plan goals were (1) to make information more timely, more readily available and more usable by reducing the difficulties of manual manipulation; (2) standardization of data; (3) to reduce the amount of space required to store records and the possibility of lost records; and (4) to raise the accuracy level of data, particularly for statistical reports.

The Strategic Plan identified 15 application packages of which Land Records was one. This plan led to the establishment of the Trial Project.

2. Trial Project

The Trial Project was begun in 1977. The purpose of the Trial Project was to define, develop and test automated processes and concepts described in the Strategic Plan that would support the recording, retrieval and display of information regarding land status, land survey description and administrative/political data.

The project designated seventy-one townships in the Lakeview District in Oregon as a test data area. The objectives were to develop and test alternative processes, methods and techniques for data base interface and to establish design criteria for BLM information systems for land and survey records. The end products were to include tested computer software modules, system documentation and an operational interactive system.

The Trial Project, discontinued in April, 1982, demonstrated that the data and information on land status and survey records could be automated. The Mining Claim Recordation System and the Automated Oil and Gas Case File Management System were developed and implemented using similar design, structure and processing concepts developed by the Trial Project. Portions of the Trial Project (i.e., some of the programs, logic, routines, etc.) will be adapted to the ALMRS.

3. Alaska Automated System

The massive land transfers required by the 1959 Alaska Statehood Act and the 1971 Alaska Native Claims Settlement Act provided impetus for land and minerals record automation beginning in 1972 for Alaska. The Alaska system now includes information on more than 200,000 cases and more than 18,000 townships. It provides a wide variety of statistical products and case processing aids.

The system was initially designed/developed to operate on a second-generation Burroughs B3500 computer configuration and later converted to a Burroughs B4800 system. It uses a structured data base with direct access capability. Many of the system functions can be processed in an on-line, interactive mode from up to 70 different remote terminals. The system operates in a timesharing, polled network environment providing response time typically in the 5-10 second range.

Although the Alaska System appears to be very much like the proposed ALMRS and the overall intent is the same, there are basic, conceptual differences in requirements between the two systems. Also, the Alaska System is based on ten-year old design concepts and ADP technology. The system consists of approximately 1200 computer programs, many of these are needed to perform functions which are now provided by third-generation operating systems software (e.g., communications and data requirements).

In order to use the Alaska System for Bureauwide land and mineral records automation, that system would have to be totally redesigned and rewritten, an effort at least as costly and time consuming as that envisioned for ALMRS. Instead, ALMRS will be developed "from the ground up" using the system concepts developed and proved by the Alaska and Trial Project efforts.

4. Automated Oil and Gas Case File Management System

This system was developed and implemented on June 1, 1982, to record, process and monitor Oil and Gas lease applications to ensure the expeditious leasing of lands; the elimination of time-consuming manual processing and existing program redundancies; and the enhancement of program planning and guidance. System components consist of: (1) a recordation and accounting advice system and (2) quarterly workload analysis and reporting system.

The Automated Oil and Gas Case File Management system was later renamed Phase I of ALMRS and expanded to include other types of land applications. Approximately 150,000 cases are now in the system. Case data currently in this system will be converted to the ALMRS Phase II data base when it has been developed.

III. SYSTEM DESCRIPTION

A. An Overview

The proposed automated system replaces the manual Historical Index and Master Title Plat system in the Western states and comparable records in the Eastern states.

The Case Recordation/Reporting Subsystem provides for the entry of case application information into a data base for storage, retrieval, case counting and statistical reports.

The Land Description/Status Subsystem processes case data against land description, current status and proposed lease stipulations to produce an adjudication analysis and draft use authorization or title documents.

The Coordinate/Plat Graphics Subsystem is an interactive information system for storage, retrieval and updating of geographic data and land status in graphic form. It will provide current computer generated Master Title Plats and the various spatial analyses necessary for case adjudication.

The system accommodates all land records activity on all lands where the BLM has surface or subsurface responsibility. This includes other agency lands where BLM is the authorizing agency and private lands where there is a retained Federal government interest. Modular development/implementation phases will provide early capabilities for priority case types such as Oil and Gas Leasing and Asset Management (i.e., land sales).

The system includes automated examination of status cases currently affecting Federal title and use authorizations to assess the presence or absence of conflicts relative to a pending case being adjudicated.

The system includes case progress tracking data and produces summary statistics and management reports on demand.

The system provides for data contributions by other agencies and/or their use of the system by receiving various outputs.

The present operational and design criteria uses State Office computers as data entry, edit and retrieval devices with main processing done on an upgraded Service Center computer. However, the system will be designed to facilitate processing in a decentralized/distributed equipment environment if that need should occur as a result of the Bureau's ADP modernization efforts.

This plan provides for alphanumeric data entry, update and retrieval from all BLM offices expected to process land and mineral cases.

Graphics data entry, update and retrieval capabilities are planned for all State Offices and selected high activity District Offices.

B. Functional Characteristics

- * Provide secure, accurate and consistent data.
- * Provide efficient and improved accessibility to a complex set of land status records.
- * Reduce response time for case processing and provide summary data to BLM managers, other agencies and public clientele.

- * Provide land description, status and position data in a variety of formats (screen display, printed list, plotted map, map display on a terminal screen) not presently available in a reasonable time.
- * Provide current records data at locations other than the BLM State Office.
- * Be easy to use with limited training and with no computer programming skill requirement.
- * Faster updating and maintenance of status records.
- * Provide for extensive use of on-line interactive processing to enter, retrieve, update and output data and report products.
- * Provide batch processing for large reports not economically feasible for on-line processing.
- * Record required payments and collections.
- * Report on program/activity workload, progress and problem areas. Provide fast multiple-location access to case and program data.
- * Apply edits to provide valid and complete applications to adjudication personnel.
- * Generate adjudication aids.
- * Relate the area of application to stipulations for the authorization.
- * Provide data to the Simultaneous Oil and Gas lease list.

1. Data Content

Legal land description data is the standard basis for identifying lands covered by title and use authorization documents. Case activity (actions-dates-who-office) data can also be stored in automated form for case and program situation processing. Payment requirements and collections data from the Financial Management System will be used to assess satisfaction of specific case requirements. Data elements for financial aspects of case activity are being prepared. An automated interface to the Bureau's FM System will be developed that will save both time and work effort over present manual methods.

2. Data Entry and Edit Process

Data entry involves two kinds of work. First, the initial data loading which involves a heavy up-front effort and cost; these activities are discussed in the Project Management Plan, (i.e., the Five-Year Budget Plan, Appendix 2). Second, continuing case activity will require day-to-day data maintenance by field office personnel. Both the initial data load and daily maintenance entries must be edited against valid codes and logic criteria to minimize/eliminate errors.

3. Data Retrieval and Output Processes

Rapid retrieval of current data from multiple locations is paramount. Retrieval of data by case, by location and by program/activity, etc., will be done in instantaneous to overnight time frames depending upon scope, complexity and the user in question.

Output formats will vary by kind of retrieval and type of equipment at retrieval site. Computer video screen terminals, either alone or in conjunction with printing terminals, can be used for many outputs, such as case abstract (serial register pages), and for special program reports or the Public Land Statistics tables. Later system components may display title/use data, alone or in combination with natural resource data, as maps and overlays on graphics terminals at field user sites.

C. Design Concepts

- * Combination "in-house" and contract effort to initially gather status and survey data; batch processing to load the data base.
- * Information retrieval and case record updates directly into DPS-8 (online, instantaneous processing).
- * Initial data entry for new cases into Level-6 using DEF II; overnight file transfer to DPS-8 for update of data base (batch processing).
- * Periodic batch processing to produce management and statistical reports.
- * Hardcopy reports driven back to Level-6 for printing.
- * Low volume information retrievals displayed and/or printed at user terminal(s).

- * Phase I data base will be converted/loaded into Phase II data base structure for all States concurrent with pilot implementation of Phase II for Arizona and New Mexico.
- * All Bureau offices (i.e., WO, SC, SO, DO, RA) having a need to interact with ALMRS will have at least one CRT and one hardcopy terminal to facilitate alphanumeric information processing. Some offices will also have graphics equipment.
- * ALMRS communications between field offices, state offices and the Service Center will be via leased lines where traffic volume warrants.
- * Level-6 remote concentration facility will be used to concentrate/share a communications link from the State office to the DPS-8.
- * State office multiplexor and the current 9.6KB leased line into the DPS-8 will continue; ALMRS will also use this communication link. See BLM National Data Communication Study for additional information on the communications network, current utilization and capacity (DSC, APR, August, 1983).
- * The system will be programmed in COBOL-74 language to facilitate conversion and portability to other computer environment(s).
- * The Honeywell DMIV Data Base Management System (DBMS) will be used to achieve data storage and access efficiencies as well as data security and integrity. (Only those DBMS features that are CODASYL standard will be used to facilitate conversion to another computer environment.)
- * Data file organization will be a combination of integrated (hierarchical) and indexed structures. If appropriate, some files may be organized and used sequentially. All major computer manufacturers/vendors support these file structures.
- * The online, interactive functions of the system will be handled through Transaction Processing, a standard feature of Honeywell's DBMS. Most of the major computer vendors also offer a similar Transaction Processing capability.
- * System design will consider and accommodate the possible need to operate in either a centralized or distributed processing environment. Data will be organized and stored in separate realms or areas for each state.

- * Phase III capabilities (graphics) will involve extracts of data from the main data base and transfer (data communication) to a graphics station where the actual processing will occur to create the graphics product.

D. Products/Services

- * Up-to-date records data can be retrieved and displayed at any site with the proper equipment; this ranges from a video formatted screen display to a graphics terminal display of a map or plat.
- * Many reports with a standard format can be retrieved upon request. Some examples are:
 - Indices (Serial Number, Location, Proprietor's Name).
 - Case Counts by case type; pending action; agency/organization where case is pending; by administrative area (states, district) or political area (State, County, etc.).
 - Progress Reports: Counts of Action by case type by administrative/political area.
 - Data Summaries: Acreage leased, patented, sold, withdrawn, surveyed, by survey type, etc.
- * Lists detailing all of the data for an area, stipulation used, mailing list by case type, lists of commodities active in an area, etc.
- * Legal acreage and computed map acre comparison reports for data edit purposes.
- * Summaries of status data and areas for Public Land Statistics reports itemized and/or totaled by time period(s) and administrative area. Examples:
 - Acres segregated from mineral location in year Y in District X.
 - Legal summaries by Administrative/Political Area, type of survey, size of parcel, etc.
 - Backlog summary report by reason, time and party holding case.

- * Master Title Plats plotted on mylar (or paper) for a township or other area (section, group of sections, group of townships, etc.).
- * Title and Use Plat displays on a graphics computer terminal with user control on case types displayed (all or a selected subset of cases). Provide interactive on-line retrieval and display with user control of scale, line type, shading and data labeling (annotation).
- * Paper copies of graphic terminal screen displays.
- * Status report - Provides an analysis of prior status on areas in a case being processed (adjudicated) and whether the parcel(s) in the application are (or are not) available to the applicant. Used as an adjudication aid by BLM personnel.
- * Authorization or Title Transfer documents drawn for review by an adjudicator, and possibly final signature where the Status Report permits.
- * Automated transfers of some data entries such as entries to a Simultaneous Oil and Gas list.
- * Query reports produced in either on-line interactive or batch processing mode depending upon length and complexity. Such reports would allow the user requesting the report to vary the retrieval and inclusion of data which is different from that provided in standard fixed format/content reports.
- * Future workload reports - Reports summarizing pending actions requiring Bureau work may be produced by area and future time periods. Action due by office or agency such as payments due, lease expiration and other work planning reports can be generated.
- * Letters to the applicant, in draft or final form to accelerate notification, requests for information, etc.
- * Case Abstracts for use by an adjudicator or the applicant; available now for interactive retrieval and output.
- * Serial Register Pages itemizing case processing status and case data.

E. Equipment and Configuration Issues

During the period 1980-82, the Service Center received steadily increasing complaints from system users at all levels regarding Honeywell 66/80 computer performance and service. The complaints generally fell into two categories; (1) inadequate turnaround (i.e., long delays before jobs could enter execution phase, then very slow processing once execution began - jobs that had required 30 minutes to process eventually required 3-4 hours to execute); and (2) insufficient data storage capacity on disk media. Concurrent with this evolving situation, new ADP requirements were being identified. In January, 1982, BLM was directed by the Department to develop and implement a Bureauwide, automated MBO System. When fully implemented, this would require data communications capability in all field offices (S.O., D.O., R.A.), some 150 terminal locations over and above those in place at the time.

Moreover, the administration's emphasis on Energy and Minerals programs further increased the awareness and need for an Automated Land and Mineral Record capability to enable more timely and effective processing of related case activities. In short, the Bureau found itself in a position of not being able to adequately satisfy current user requirements as significantly new requirements were evolving.

In November, 1981, the Service Center initiated a FEDSIM Study (DSC, APR, August, 1983) to identify system constraints and how current capacity was being used/consumed. Major findings by the FEDSIM group were:

1. BLM operates a heavy and relatively sophisticated timesharing service/workload which continues to increase as more field users become aware of and oriented to ADP.
2. The current timesharing demand consumes 50% of the existing computer system capability. Batch processing (production applications and system development activities) consume the remaining 50%.
3. Processor (CPU) utilization during the prime (i.e., day) shift was 100%. Utilization on the evening shift was 65-70%. While computer power was available on the night shifts, there was very little potential for transferring demand from the day shift to the night shifts.

4. The two major constraints of the system were lack of CPU cycles (i.e., we needed more or faster processors) and disk storage media.

In January, 1982, the Service Center began an equipment analysis to determine upgrade requirements for improving computer performance and service to current users as well as the impacts of implementing the proposed new applications (Automated Land and Mineral Record System and MBO). In addition, plans to redesign the Financial and Program Management Systems to employ more modern and efficient processing methods are expected to result in more demand for service and performance during those periods when we experience our greatest problems. The current financial and program management systems primarily rely on key entry of source transactions which are batched and periodically (weekly or monthly) applied to central master files. Management reports are then produced and mailed to headquarters, field offices and other agencies. We envision a redesigned version of these systems as relying more on data communications to enable timely update of financial and budgetary transactions and retrieval of information by the user to determine current status. Our analysis also included the feasibility and relative cost/benefits of upgrading state office mini-computers to accommodate processing requirements; however, we determined that even with a maximum upgrade of the state office computers, those systems could not accommodate the functionalities and performance requirements of the planned applications.

The results of this analysis identified the following equipment requirements:

- Approximately 500 additional user terminals in field offices to access the computer system. We anticipate the availability of these new terminals will at least quadruple the number of Bureau employees using the computer.
- Additional disk storage media to accommodate some 9 billion characters of new data plus resolve current data storage deficiencies.
- Additional CPU power to resolve deficiencies in system capacity and performance as it related to current requirements; also, a significant increase in CPU power would be necessary to ensure adequate service to users of the Automated Land and Mineral Record System, possibly requiring the equivalent of a dedicated central processor with associated peripherals.

In January, 1982, the Service Center initiated a Bureauwide data communications study (DSC, APR, August, 1983) to determine current utilization of the network, residual capacity and needs for network optimization. The study included the technical characteristics and geographical locations of all terminals at each state office that were communicating at 1200 BAUD. Data traffic to and from each state office were presented by time phase workload projected through FY-87.

In early 1982, utilization of the Bureau's data communication network was averaging approximately 3-4% of capacity. We estimate this has increased as a result of ALMRS and MBO traffic to approximately 10% of capacity. There remains enough network capacity to handle all known requirements through FY-87.

After completing the various described studies and our needs analysis, the Dual Processor H66/80 system was upgraded to a Dual Processor DPS-8 in December, 1982. This was accomplished under existing contracts that were competed under a DPA granted by GSA. Since our conversion/upgrade to DPS-8, system performance has increased dramatically and we are able to complete current workloads with an acceptable level of service to users. If current workload in other program areas does not increase significantly, we should be able to support the pilot ALMRS implementations in Arizona and New Mexico in 1985 with our current DPS-8 configuration with the likely exception that more disk storage media will be required to store the additional ALMRS data. However, if the Bureau/Secretary accelerates the ALMRS automated effort or otherwise increases our ADP workload, a third DPS-8 processor and associated components may be required by the end of FY 84.

Beginning in FY 83, the Bureau will embark on an ADP Modernization Project to replace all Honeywell equipment. The Requirement Analysis will also encompass the Bureau's Geographic Information System applications currently being processed on Data General and Hewlett-Packard computer systems. This massive procurement effort is projected to be completed at the end of FY 87. If any delays are encountered in our equipment replacement program and the Bureau must continue to use the DPS-8 system into the FY 86-88 period, it is almost certain that a third, and perhaps a fourth, DPS-8 Central Processor (CPU) will be needed.

F. Schedule of Events and Milestones

Major milestones are listed here. See Appendix 14 and 15 for more complete listing and graphic displays.

3/82	Project initiated.
4/82	Project Director appointed. Phase I user requirements defined.
5/82	Phase I system design completed. Phase I programming started.
6/82	Phase I testing and training completed; system implemented.
7/82	Oil and Gas cases and all new applications received are being entered into Phase I data base.
10/83	Phase II and Phase III user requirements defined.
12/83	Enhancements to Phase I completed.
3/84	Phase II system design and specifications completed.
5/84	Phase II hardware approvals obtained.
7/84	Phase III system design and specifications completed.
6/85	Software design and development completed for Phase II. Phase III hardware approvals obtained.
9/85	Phase II training plan and testing completed.
10/85	Phase II pilot states implementation; conversion from Phase I to Phase II data base structure (all states).
3/86	Pilot states Phase II operation evaluation.
4/86	Begin Phase II implementation in remaining states.
6/86	Software design and development completed for Phase III.
9/86	Phase III training plan and testing completed.

IV. PROJECT MANAGEMENT

A. ALMRS Approval/Authorization

The current effort was authorized by DPP 83-3 on August 23, 1982. The Director of BLM formally approved development and implementation in a decision document on July 9, 1982. A copy of this document is included in Appendix 4. The system has also been endorsed during briefings to/by Assistant Secretary Carruthers and is included in the Bureau's MBO package for FY 83. The draft compromise budget for the Department of Interior recently prepared by both Houses of Congress includes ALMRS development funds for FY 84.

B. Project Direction and Administration

The ALMRS Project Office provides the leadership and guidance for the ALMRS project. The Project Manager who reports to the Director/Associate Director, exercises Bureauwide leadership over the ALMRS project and ensures integration of that program's functions with the Bureau's planning system; programming, budgeting and management processes; and related supporting systems and activities. The Project Manager serves as the Bureau's program administrator and is responsible for: 1) directing Bureauwide ALMRS strategic planning; 2) providing guidance and coordination for short-range planning, systems development, testing, implementation and operation of the ALMRS project; 3) ensuring development and implementation of an effective system or program evaluation. The ALMRS program consists of the integration of: 1) automatic data processing and computer related storage and retrieval systems; 2) telecommunication; and 3) efficient and effective automated system of case processing and graphic presentations. The Project Manager represents the Bureau on matters pertaining to assigned responsibilities in communications with Secretarial officials, other Government officials and the public.

C. Organizational Roles

Project Manager (WO-105) - coordinates at the WO level the daily activities surrounding the project's requirements. Is responsible for oversight of Denver Service Center activities in respect to the ALMRS project. The project Manager is also responsible for:

- * Project Direction
- * LCM development
- * Planning (Operational & Budgetary)
- * Oversight

- * Issue development & policy formulation
- * Obtaining Dept. clearances
- * Obtaining Bureau clearances
- * User and Program Office requirements
- * Setting MBO requirements for the project
- * Interagency coordination

Director's Special Assistant for ALMRS (WO-104) - Acts as the Director's special representative to assure compatibility of the project with the Director's objectives.

The Information System Management (ISM) Steering Committee - This group is comprised of the three BLM Deputy Directors. It acts as the primary decision-making and policy body for the Information System program and all aspects of the project. All Phases (milestones) of Life Cycle Management (LCM) are required to be cleared through this Committee before another Phase may begin to be developed.

State Office Representative Committee - Is established to serve as the coordinating link between the State Offices, the ALMRS Project Office and the Denver Service Center. A representative from each state will serve as the ALMRS project leader for their state. They will be responsible for monitoring and evaluating ALMRS activities and project accomplishments to assure that state requirements are satisfied and the coordination of all activities within their respective states with respect to this project. Acts as the technical advisor and contact representative for the ALMRS WO staff. Makes recommendations and comments within those areas which pertain to their states requirements.

Field Committee - This group is comprised of the Bureau's Associate State Directors. It is responsible for providing direction and oversight to the S.O. Representative Committee. Assures that all state needs and requirements are satisfied in respect to the ALMRS's project.

Deputy Director for Energy and Mineral Resources (WO-500) - Is responsible for monitoring and evaluating ALMRS activities and project accomplishments to assure that Energy and Mineral Resource requirements are satisfied. Responsible for coordinating all activities within Energy and Mineral Resources with respect to this project. Acts as the technical advisor and contact representative for the ALMRS WO staff. Makes recommendations and comments within those areas which pertain to Energy and Mineral Resources requirements.

Deputy Director for Land and Renewable Resources (WO-200) - Is responsible for monitoring and evaluating ALMRS activities and project accomplishments to assure that Land and Renewable Resources requirements are satisfied. Responsible for coordinating all activities within Land and Renewable Resources with respect to this project. Acts as the technical advisor and contact representative for the ALMRS WO staff. Makes recommendations and comments in those areas which pertain to Land and Renewable Resources requirements.

Division of Cadastral Survey (WO-) - Is responsible for the WO approval of the Geographic Position User Requirements and coordinates approval of project accomplishments in this area of work with that of the Denver Service Center, the Division of Information Systems and the U.S. Geological Survey.

Chief, Information Systems (WO-870) - Acts as the main support to the Information Systems Program; also performs as the executive arm of the ISM Steering Committee & Field Committee. Is responsible for program support to ALMRS, its maintenance and LCM compliance & clearance prior to submission to the Steering Committee and the Department (PIR).

Assistant Service Center Director Data Systems (D-200) - Is responsible for the automated support to the project, development of LCM documentation, system integrity and security and coordination of technical planning with participating agencies. D-200 will exercise configuration management to ensure compatible Bureauwide system capabilities regardless of variations in equipment and software.

Assistant Service Center Director for Technical and Scientific Systems (D-400) - Is responsible for developing Bureauwide User Requirements, Contracting Services and support to LCM documentation being developed by D-200.

ALMRS Interagency Coordinating Board - Composed of WO representatives from other participating agencies (USGS, USFS, FWS, BIA, MMS, SCS, NPS & LRM) for the purpose of addressing technical and operational planning issues so solutions may be sought in an expeditious and cost-effective manner. This Board is chaired by the Project Manager. One representative from each BLM Deputy Director is to be included as a member.

D. Technical Development Responsibilities

The Denver Service Center will be responsible for all technical activities related to the development of ALMRS. Some work may be contracted with private concerns or other government agencies while some development tasks may be accomplished by state office ADP personnel. In cases where work is contracted or delegated to others, the Service Center will act as the COAR or overseer of such efforts, directing and controlling those events to ensure system integration and that objectives, specifications and schedules are met.

V. AGENCY COORDINATION

It is anticipated that other agencies working with land and mineral data will participate in this development project and will use the ALMRS data base.

Following is a tabulation of coordination actions to date:

1. USGS has assigned one employee full time (100%) to work with BLM at the Denver Service Center to define the data base for Phases II and III. This is to ensure compatibility with their complementary efforts in mapping.
2. The Bureau of Reclamation has elected to use ALMRS to track cases in their Asset Management (land sale) Program. All of their cases are now in the BLM system with Phase I outputs available to them. The Commissioner advised the Assistant Secretary, Land and Water Resources, by memorandum in May of 1983 of this decision.
3. The Forest Service, Region 2, has agreed to provide staff to code all FS boundaries, Wilderness and Rare II areas into the Geo-Reference File (part of the ALMRS data base). This effort is scheduled to begin in mid-1983. In addition, the Bureau, as a system test, has agreed to place a CRT terminal and printer in the FS Regional Office. This will allow other appropriate State Offices of BLM to refer applications to the FS via computer and the FS to respond with appropriate entries to update BLM cases. No paper will be exchanged but both agencies will communicate by updating a common data base.

4. BLM has proposed a common data element dictionary for use by MMS in their PAAS system. BLM is working closely with the MMS contractors to assure compatible systems, where possible, to facilitate future data exchanges.

VI. RESOURCE REQUIREMENTS

- * A Cost Summary for development, equipment and data conversion is shown by Fiscal Year in Appendix 5, Table 10.
- * Data conversion, abstracting, key entry, editing and verification will be the major cost. Nearly \$25 million of the \$41 million total is for data conversion.
- * Equipment costs are approximately \$14 million.
- * Development workmonths and related costs are under \$2 million.
- * Average time and cost per township by activity are itemized in Appendix 6, page 15. Costs are also isolated by data type and method of accomplishment (i.e., by contractor or by BLM personnel). Land description costs \$64/Township; status \$182/Township, (a total of \$246/Township).
- * Geographic positions (coordinates) are estimated to cost \$250 per Township. This data is used to support adjudication processing and prepare graphic displays of plats.
- * Costs per township in Appendix 6, page 15 (Table 5) are for Western states. Adjustments for Eastern states, where costs will be higher due to record limitations and non-public land survey areas, are also shown on page 15 (Table 5) of that document. The national average cost is increased to \$286 per township by the higher costs in the case. Including coordinate data, the cost is \$536 per township.
- * Data conversion phases and volumes are shown by fiscal year and the cumulative data base in Appendix 5, Table 10.
- * Cost estimates for any BLM administrative state may be computed using per township costs in Appendix 6, page 15 (Table 5) by the number of townships in Table 8 on page 18 of that document.

SECTION 1

DEVELOPMENT PROJECT PROPOSAL

A number of official documents relating to the ALMRS Project have evolved, as has the project itself. The need for such a system was first identified in the 1974-75 time frame with the preparation of the Bureau's Strategic Plan for Information Systems Management. The Alaska effort (1972 - present) to automate Land and Mineral Records and the Trial Project (1977 - 1982) developed and proved the concept. In early 1982, Secretary, DOI, established MBO goals/objectives to reduce the backlog of Oil and Gas lease applications and streamline that process. In February, 1982, our BLM headquarters (WO-530) prepared a draft DPP 83-3 (Appendix 7) outlining the requirement for an "Automated Oil and Gas Case File Management System". At about the same time, the Denver Service Center was preparing a similar proposal but with greater scope (i.e., automate all land and mineral records); this proposal was entitled "ALMRS Program Package" dated March 15, 1982 (Appendix 8). In April, 1982, A Land Records Task Force met in Denver at the direction of Mr. David Tidwell, Special Assistant to the BLM Director, and in their April 6 memorandum (Appendix 9) recommended that the Denver Service Center develop an "automated system for case recordation, receipt validation and accounting and generating statistical data on new cases". Mr. Tidwell approved this recommendation on April 2, 1982. The system was developed and implemented on June 1, 1982 (as scheduled) and became known as Phase I of ALMRS. On July 9, 1982, the BLM Director approved a decision document (Appendix 4) calling for the "Automation of Land Status Records and Case Processing", a multi-year project. This approval document embodied the concepts of: System Life Cycle Management; computer equipment replacement in 3-5 years with interim upgrades of current system configuration to support project requirements; system design approach that would facilitate decentralized ADP operation; and interagency (e.g., USGS, USFS, MMS, etc.) participation in the development and use of the system. On August 7, 1982, the BLM Director signed DPP 83-3 thereby approving work efforts for FY 83.

SECTION 2

PROJECT TEAM ADMINISTRATION

The Director's Decision Paper of July 9, 1982, approved an organization structure to carry out the effort. This organization decision was supported by the following narration:

"It is recommended that the policy direction for automation of the Land Status Records come directly from the Washington office and that a special committee (Land Survey/Status Automation Committee) representing the Bureau's Deputies have the responsibility of providing overall guidance. Since the three Deputies share in or have programs that are supported by the Land Status records, all three should share the responsibility for implementation of Land Status automation.

This would include providing appropriate planned funding in the outyears to cover their respective areas of responsibility. This committee, responsible for oversight, should plan the appropriate requirements in the budget and forward those requirements to the respective Deputy to assure coverage in the appropriate outyear budget. The second line of the organization, the Denver Service Center (with guidance from the Division of Information Systems), would establish a special team for standards and criteria. This team would be responsible for uniformity, standards and required criteria that cause the system to operate efficiently. Staff from D-200 and D-400 would be assigned to the particular operational group. The team would be responsible for developing and executing all operational aspects of Life Cycle Management for the project. All directions from this group would be cleared through the central committee in the Washington Office.

As the third line of the organization for implementation, each State Office would be responsible for establishing their schedule for automation of Land Status Records and would be responsible for working with the Denver Service Center to establish their needs on a year-by-year basis so that the WO committee could have an understanding of future outyear requirements."

The decision also identified the Chairman of the Land Status Automation Committee as the Project Manager and also directed the Service Center Director to assign a Project Coordinator responsible for standards and daily guidance.

Mr. Larry Montross was appointed as the initial Project Manager. In January, 1983, he was replaced by Mr. Charles Tulloss, the current project manager. The Assistant Service Center Director for Technical and Scientific Services was designated as Technical Project Coordinator.

In order to provide for improved direction and project control the following administrative actions have been taken:

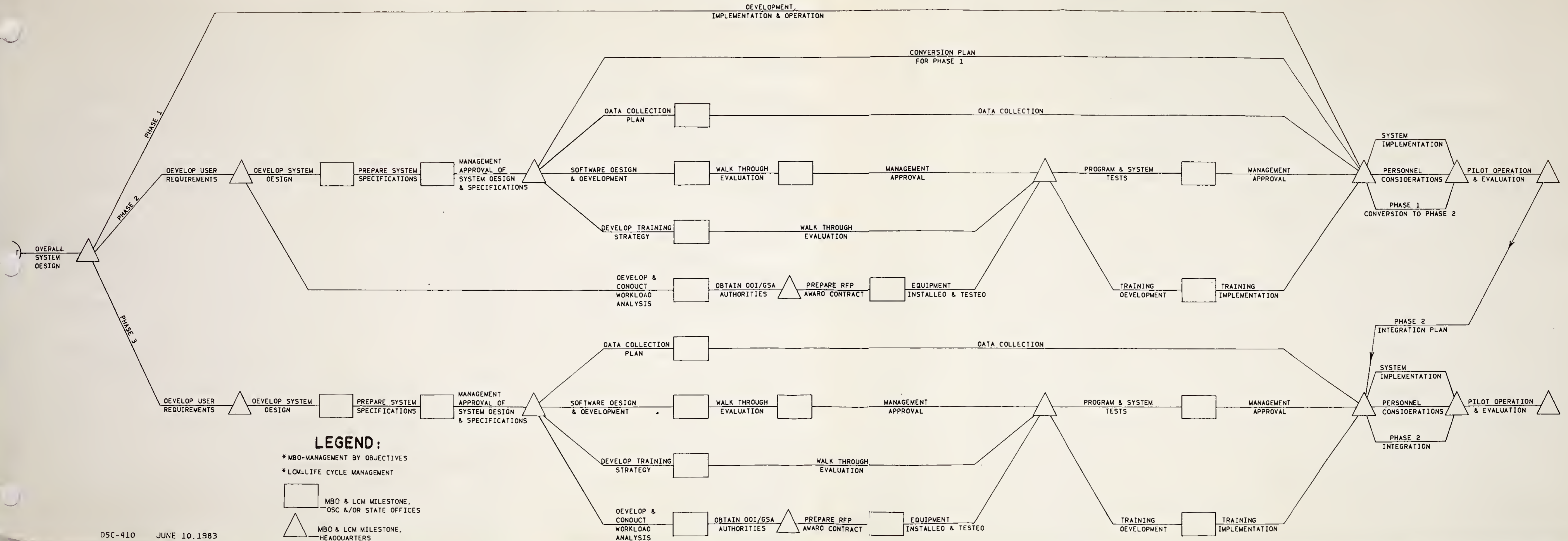
- A. The Project Manager (Mr. Tulloss) has total responsibility and authority to direct the ALMRS project. The Project Manager has a small administrative staff and is located in the Washington Office (105). This office is also responsible for coordination of top management and resource manager needs, other agency involvement, and standardization of systems.
- B. A technical advisory staff of specialists consisting of an Assistant Project Manager, Resource Specialist(s), Record Specialist(s), ADP Specialist(s), etc., is located at the Denver Service Center reporting directly to the Project Manager. NOTE: It was determined that the Assistant Project Manager should not be an Associate Service Center Director to avoid any conflict of interest.

The primary functions of this group are technical oversight to ensure the system meets user requirements, project coordination and liaison with other organizational entities (e.g., SOs, WO, USGS, USFS, etc.).

- C. A dedicated ALMRS Development Team from resources within D-200 and D-400 has been established.
- D. State Office involvement has been assured by assigning state office ALMRS coordinators to the technical advisory staff. This will involve occasional need for travel and temporary duty at the Service Center, the WO, or other state offices.

SECTION 3

ALMRS MBO* & LCM* NETWORK



SECTION 4

REQUIREMENTS/FEASIBILITY STUDY

As we attempted to respond to and follow the current LCM guidelines for this section, it soon became apparent that the guidelines and the information being asked for are not appropriate for this phase of system life cycle (e.g., the requirements for data file descriptions, structures, etc., involve technical detail and system design considerations which have not been addressed at this time). As mentioned elsewhere, the Bureau is presently revising the LCM guidelines to make them more compatible with its 1260 series manuals and related FIPS publications. For these reasons we elected to follow the outline in Chapter 3, FIPS Publication 64 in describing the Requirements and Feasibility efforts for ALMRS. When appropriate, reference is made to various historical documents contained in the appendix.

The concept for automation of Land Records was first documented in 1977 with the establishment of a "Trial Project". The project's objectives were to test alternative processes, methods and techniques for data base management, graphics, telecommunications and user interface in order to establish design criteria for automated land and survey records. The "Trial Project" was conducted in 71 townships in Oregon between 1977 and March 15, 1982. A final report detailing the results of the "Trial Project" along with conclusions and recommendations is included as Appendix 10. The report recommended a two phase development and implementation system: the first phase including only Oil and Gas and the second phase to encompass all other activities including expansion of land description and administrative data. The "Trial Project" did not evaluate the graphics integration with alphanumeric records.

The conclusion reached from the "Trial Project" was that interactive data maintenance and use by field personnel was feasible and could be accomplished Bureauwide.

Following the "Trial Project" a BLM Task Force was established to prepare plans for developing and implementing a BLM Automated Land and Mineral Record System (ALMRS). A study of hardware, software, facilities, personnel and other resources was conducted. Various alternatives resulting from this study are presented in Appendix 11.

A Task Force meeting was held on April 22, 1982, to discuss project issues including what could be accomplished within existing resources, minimum information needs and the overwhelming number of new lease applications as a result of increased Oil and Gas exploration and drilling. The results of this meeting are presented in Appendix 12. The meeting led to the establishment of objectives and guidelines for developing ALMRS.

The BLM Director approved the ALMRS project by endorsing the Director's Decision Document on July 9, 1982 (Appendix 4).

In order to assure the legality and use of automated records, the Bureau's Associate Solicitor was requested to furnish a legal position on the project. The solicitor's findings showed that automation of land status records:

- 1) Would have the same force and effect as the manual noting of BLM records;
- 2) Would be available and could be used as evidence in legal proceedings;
- 3) Would permit the elimination/retirement of existing paper based records.

A full text of the solicitor's comments dated September 3, 1982, can be found in Appendix 13.

A benefit/cost analysis was prepared in July, 1982, revised in November, 1982, and subsequently revised again in July, 1983. The revisions were accomplished to update data contained therein and to reflect the latest knowledge available concerning the ALMRS project. Only the latest benefit/cost analysis is included in this document (Appendix 5).

Appendices

1. Glossary
2. Project Management Plan (ALMRS FY 1985 budget 5 year plan)
3. Information Memorandum 82-261, Land Status Records/Case Processing Automation Project, August 17, 1982
4. Director's Decision Document, July 9, 1982
5. Benefit/Cost Analysis for ALMRS, Revised July, 1983
6. Project Management Plan for Automation of a Land and Minerals Management System, July 26, 1982
7. Development Project Proposal for an Automated Oil and Gas Case File Management System, February, 1982
8. ALMRS Program Package, March 15, 1982
9. Recommendations of Lands Records Task Force, April 6, 1982
10. Trial Project Final Report, May 21, 1982
11. ALMRS Task Force Study
12. Automation Task Force Meeting, April 22, 1982
13. Solicitor's Comments on Land Status Records Automation September 3, 1982
14. MBO/LCM Flow Chart, June, 1983
15. ALMRS Development Plan, June, 1983
16. Instruction Memorandum DSC-82-135, Implementation of Automated System for Land Records, April 16, 1982

Appendix 1

Glossary

GLOSSARY

ADP	- Automatic Data Processing
ALMRS	- Automated Land and Mineral Record System
APR	- Agency Procurement Request
BIA	- Bureau of Indian Affairs
CPU	- Central Processing Unit
DBMS	- Data Base Management System
DO	- District Office
DPP	- Development Project Proposal
DPS/8	- Dual Processor Honeywell Computer
DSC	- Denver Service Center
DSR	- Data System Request
FEDSIM	- Federal Computer Performance Evaluation and Simulation Center
FIPS	- Federal Information Processing Standards
FMS	- Financial Management System
FWS	- Fish and Wildlife Service
GSA	- General Services Administration
HI	- Historical Index
ISM	- Information System Management
Level-6	- Honeywell Mini Computer
LCM	- Life Cycle Management
LRM	-
MBO	- Management by Objectives
MMS	- Minerals Management Service
MTP	- Master Title and Use Plat
NPS	- National Park Service
PLS	- Public Land Statistics
RA	- Resource Area
SC	- Service Center (Denver)
SO	- State Office
SRP	- Serial Register Page
USGS	- United States Geological Survey
USFS	- United States Forest Service
WO	- Washington Office

Appendix 2
Project Management Plan
(ALMRS FY 1985 Budget 5 Year Plan)



→ D-220 Jon S.

IN REPLY REFER TO
1670 (105)

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
WASHINGTON, D.C. 20240

June 10, 1983

Memorandum

To: Chief, Office of Budget
From: ALMRS Project Leader (105)
Subject: FY 1985 Budget: 5-Year Plan

Enclosed for your information is the FY 1985 Budget: 5-Year Plan
for the ALMRS Program.

Jeffrey J. Jung, Acting

Enclosure

Reid 6-13-83
W0-870 AH

FY 1985 BUDGET: 5 YEAR PLAN

AUTOMATED LAND AND MINERAL RECORDS SYSTEM (ALMRS)

June 10, 1983

I. PROBLEM/NEED

The Land Status Records System is the foundation of the Bureau's resource program activities. The present manual system is a paper record system comprised of many components and subsystems which transcend a number of organizational units. This system is used by Lands, Minerals, and other resource program offices of the Bureau of Land Management, other agencies (U.S. Geological Survey, and Wildlife Service) and the private sector.

The users of the system are located nationwide, but the up-to-date data is only available at BLM State Offices in manual format and by manual access methods. The users are having difficulty in accessing, summarizing, and interpreting data by area, case type, and case actions. Use of title rights and use authorization data (status) for case processing by other resource programs require time-consuming manual searches of records. Some of the specific problems presently being experienced are as follows:

- Data is not always secure, accurate, and consistent.
- Data is not always accessible to users especially when there is more than one user desiring access of the same document.
- The present manual system is not economical in terms of work level and productivity.
- There is an ever-increasing space requirement for the use and maintenance of the manual records resulting primarily from increased lands and minerals activities.
- Interpretative quality of records is deteriorating.
- Resource data impacting the availability/nonavailability of public lands is not now displayed on present land status records.
- The deterioration of archival records resulting from constant use and the normal aging process.
- The delay in response time for case processing which contributes significantly to case processing backlogs Bureauwide.
- The delay in providing summary data to BLM managers, other agencies, and the public.
- The current need for training resulting from a heavy turnover of personnel in records sections is not being met, largely due to funding constraints.
- The process of updating and maintaining the manual records is slow.
- Only on-site (at the State Office) inquiries of data (mail and telephone) are possible.
- Bureauwide reports which rely largely on manual or paper record systems are extremely costly and some are not economically feasible.

- The manual process tends to breed tedious and duplicative tasks.
- Does not provide land description, status and position data in a variety of formats.

A. GOALS/OBJECTIVES

The goal of the project is to develop and implement an automated data base of land status and survey information to provide the Bureau with a more effective and efficient system to support its resource program activities and to improve service to the public.

This plan provides for alphanumeric data entry, update and retrieval from all BLM offices that process land and mineral cases. Graphics data entry, update and retrieval capabilities are provided to all State Offices and selected high activity District Offices. All BLM offices are provided with the capability to retrieve and display both alphanumeric and plot graphic data.

ALMRS will resolve the present problems of deficiencies in the manual land status records system through accomplishing the following objectives:

- Provide secure, accurate, and consistent data.
- Provide efficient and improved accessibility to a complex set of land status records.
- Provide economies in terms of work force level and productivity.
- Decrease space requirements to house status records in an era of increasing lands and minerals case activity.
- Decrease rate of records deterioration due to use and age by providing access with automation.
- Reduce response time for case processing.
- Reduce response time in providing summary data to BLM managers, other agencies, and the public.
- Provide land description, status, and position data in a variety of formats (screen display, printed lists, plotted maps, map display on a terminal screen).
- Provide current records data at locations other than the BLM State Office.
- Be easy to use with limited training and with no computer programming skill requirement.
- Provide for faster updating and maintenance of status records.
- Provide for direct inquiry of data by users through terminals in the public room, field offices, and other locations.

- Provide extensive use on-line interactive processing to enter, retrieve, update, and output data and report products.
- Provide batch processing for large reports not economically feasible without on-line processing.
- Eliminate tedious and duplicative tasks.

B. DESCRIPTION OF PROJECT

ALMRS will be comprised of land survey descriptions, land and mineral title rights and use authorizations (land status records) and case activity tracking and processing combined into one automated data base and integrated set of functions. Status will include all of the surface and subsurface records data supporting resource program activities.

The system will replace the manual system with a streamlined combination of manual and automated steps. The initial automation functions to be implemented include:

- Receiving and screening of applications.
- Initiation of case files and tracking the case file location.
- Entry and maintenance of case data and actions into the automated status records.
- Tracking required payments and collections and providing receipt data to the accounting and fund control system.
- Reporting on program/activity workload, progress and problem areas.
- Providing fast multiple-location access to case and program data.
- Editing to provide valid and complete applications for adjudication personnel.
- Generation of adjudication aids.
- Relating the area of application to stipulations for the authorization.
- Providing data to the Simultaneous Oil and Gas lease list.
- Calculating billing amounts by case.

1. Data Content .

Land survey description data is the standard basis for identifying lands covered by title and use authorization documents. Case activity (actions-dates-who-office) data can also be stored in automated form for case and program situation processing. Payment requirements and collection data will be needed to assess satisfaction of specific case requirements. Data elements for financial aspects of case activity are being prepared. An automated interface to the Accounting and Fund Control System will be developed that will save both time and work effort over present manual methods.

2. Data Entry and Edit Processes

Data entry involves two kinds of work. First, the initial data loading which involves a heavy up-front effort and cost; these activities are discussed in the Plan for Work section. Second, continuing case activity will require day-to-day data maintenance by field office personnel. Both the initial data load and daily maintenance entries must be edited against valid codes and logic criteria to minimize/eliminate errors.

3. Data Retrieval and Output Processes

Rapid retrieval of current data from multiple locations is paramount. Retrieval of data by case, by location, and by program/activity, etc., will be done in an instantaneous to overnight time frame depending upon scope and complexity, and the user in question.

Output formats will vary by kind of retrieval and type of equipment at retrieval site. Computer video screen terminals, either alone or in conjunction with printing terminals, can be used for many outputs like case abstracts (serial register pages), etc., and for special program reports or the Public Land Statistics tables. Later system components may display title/use data alone or in combination with natural resource data, as maps and overlays on graphics terminals at field user sites.

II. DESCRIPTION

A. An Overview

The automated system replaces the manual Historical Index and Master Title Plat system in the Western states and comparable records in the Eastern States.

Case Recordation/Reporting provides for the entry of case application information into a data base for storage, retrieval, case counting and statistical reports.

Land Description/Status Data processes case data against land description, current status and proposed lease stipulations to produce an adjudication analysis and draft use authorization or title documents.

Coordinate/Plat Graphics is an interactive information system for storage, retrieval and updating of geographic data and land status in graphic form. It will provide current computer generated Master Title Plats and the various spatial analysis necessary for case adjudication.

Case processing and statistical report processing development assumes that land description, administrative/political area and case data including coordinate position data for boundary points will be automated concurrently. Case processing software development will be phased to utilize data as it is converted to automated format by the implementation step of the system development life cycle.

The system accommodates all land records activity on all lands where the BLM has surface or subsurface responsibility. This includes other agency lands where BLM is the authorizing agency and private lands where there is a retained Federal Government interest. Modular phases will provide early capabilities with priority case types such as Oil and Gas and Asset Management.

The system includes automated examination of status cases currently affecting Federal title and use authorizations to assess the presence or absence of conflicts relative to a pending case being adjudicated.

The system includes case progress tracking data and produces summary statistics and management reports on demand.

The system provides for data contributions by other agencies and/or their use of the system by receiving various outputs.

Interim design criteria uses State Office computers as data entry, edit and retrieval devices with processing done on an upgraded Service Center computer. This plan does not include provisions for future equipment and personnel requirements for a decentralized and distributed processing system scheduled for the late 1980's. Provisions will be made to facilitate distributed processing the decentralized system where appropriate.

This plan provides for alphanumeric data entry, update and retrieval from all BLM offices expected to process land and mineral cases.

Graphics data entry, update and retrieval capabilities are provided to all State Offices and selected high activity District Offices. All BLM offices are provided with the capability to retrieve and display both alphanumeric and plat graphics data.

B. System Characteristics

- Provide secure, accurate and consistent data.
- Provide efficient and improved accessibility to a complex set of land status records.
- Provide economies in terms of work force level and productivity, and space required to use and maintain status records in an era of increasing land and mineral case activity.
- Decrease rate of record deterioration due to use and age by providing access with automation.
- Reduce response time for case processing and providing summary data to BLM managers, other agencies and public clientele.
- Provide land description, status and position data in a variety of formats (screen display, printed list, plotted map, map display on a terminal screen) not presently available in a reasonable time.
- Provide current records data at locations other than the BLM State Offices.
- Be easy to use with limited training and with no computer programming skill requirement.
- Faster updating and maintenance of status records.
- Provide for direct inquiry of data by clients through terminals in public room, field offices and other locations.
- Provide extensive use on-line interactive processing to enter, retrieve, update and output data and report products.
- Provide batch processing for large reports not economically feasible with on-line processing.
- Specific activities in State and District Offices will change as procedures are integrated, and some functions are replaced by automated procedures. Some tedious and duplicative tasks will be eliminated.

PHASES OF ALMRS

As a benefit for those not acquainted with ALMRS, Tables 1, 2, and 3 are provided as Appendix A. These tables detail what each of the three phases encompasses.

Phase I: Case recordation and program statistics

This phase, fully operational at present, accommodates most active land and mineral case types although initial emphasis is on oil and gas activity. Some modifications can be made to add remaining cases, types and data elements so that land sales, withdrawals, and other cases are included. All new applications, as of June 1, 1982, are being entered into the system. Phase I provides automated SRPs and reports of case counts. It is estimated that the Bureau's present Honeywell system in Denver will include some 250,000 oil and gas and other cases by December 1983. Phase I is being implemented on a Bureauwide basis.

Phase II: Case Processing with Land Description and Status Data

This phase includes entry of all relevant land area description data (survey) and existing cases affecting the current status of Federal land and mineral rights. This includes approximately 46,000 townships which contain land where the Federal Government has either surface or subsurface rights in the lower 48 states. It is anticipated that this caseload would be fully automated by FY 1991. Implementation of Phase II continues the features and benefits of Phase I and adds the capability to:

- validate legal land description data in new case applications;
- assist adjudication by automatically adjusting total acres in cases as land availability is determined;
- provide more comprehensive reporting; and
- retire the Historical Index as townships are automated and brought "on line."

Phase II will be piloted in New Mexico and Arizona and subsequently phased into Bureauwide implementation 2 to 3 states per year.

Phase III: Case Processing with Geographic Coordinate Positions and Plat Graphics

Phase III is distinguished by automation of geographic coordinate position data for legal land description boundaries. This provides for additional automation of adjudication processing and visual displays of complete or selected status now shown on the MTP, use plats and tract books. This requires entry of coordinates for points on perimeters of land description areas and integration with land status data via legal land description. Additional equipment will

be needed in field offices to update land description boundary data and in turn the coordinates necessary to retrieve and display status plats on graphic computer terminal screens, screen copiers and plotters. Products added to Phase III include automated Master Title use plats and other map overlays needed for case processing and adjudication. There will be capability to interface with other agencies and the private sector. The USGS is expected to assist in design of Phase III. New or modified computer and telecommunication systems will be needed to properly support Phase III implementation. Phase III will be piloted and phased into the Bureau in the same way as Phase II.

Upon implementation of Phase III, ALMRS will be fully operational and all elements of the manual record system could be retired from daily service and maintenance.

Project Interdependence

Although ALMRS is a phased program, certain phases are independent. Phase I when fully implemented is independent of Phase II or III. Phase II will include the addition of survey and status data along with the conversion of the Phase I data base, thereby making Phase II independent.

Because Phase III will consist of graphic components of ALMRS, it will require the Phase II alpha numeric data, thereby making Phase III dependent upon Phase II information.

Agency Coordination

Following is a current analysis of coordination needs and established coordination mechanisms.

CRITICAL

1. U.S. Forest Service (USFS):

Need

Common interest in development of compatible data bases for ALMRS (BLM) and Production Accounting and Auditing System (PAAS) (MMS) Royalty Management program to insure ease of data exchange. Utilize ALMRS for mineral case tracking and report generation. Would be end-user of cadastral survey information.

Action to Date

Have conducted coordination of BLM Headquarters through the ALMRS Project Office (WO-105). Coordination is also ongoing at Denver Service Center level by a task force working to insure compatible data elements where needed.

The Forest Service has had an automated system, Minerals Leasing File (MLF), for the last 6 years. MLF was developed to assist Regions to monitor and manage mineral leasing activities on National Forest Service lands. To cooperate with ALMRS, however, USFS has delegated the Rocky Mountain Region (R2 Denver) to participate in the ALMRS project.

Multi-use lands information is provided by the Forest Service's (LOMS) Landownership Management System. This is made up of a collection of files, all relating to lands using a common parcel identifier. This system, which will provide case tracking and report generation, will be operational by end of FY 1983. Coordination will continue to insure that LOMS and ALMRS will be compatible wherever possible.

Information dealing with lands and interests acquired since 1966 using Land and Water Conservation Funds (L&WCF) east or west of the 100th Meridian are included in one subsystem - the 'Land East-West' (LEW).

Information dealing with specific special uses which allow others to occupy lands and the use of interests on Forest Service administered lands are included in one subsystem - the 'Land Uses Reporting' (LUR).

The ALMRS group will also continue to work closely with the Forest Service in developing the part of the total system that deals with lands in states not under the rectangular survey system.

2. Minerals Management Service (MMS):

Need

Common interest in development of compatible data bases for ALMRS (BLM) and Production Accounting and Auditing System (PAAS) (MMS) Royalty Management program to insure that royalty payments are cross-checked with actual production figures.

Action to Date

Coordination at BLM Headquarters through the ALMRS Project Office and through a special liaison presently established in the Office of the Deputy Director for Energy and Minerals. At the field level, there is an ongoing task force working to insure compatible data elements where needed.

3. U.S. Geological Survey (USGS):

Need

Common interest in development of land description/status data base and coordinate values for public land survey to insure compatible systems for data interchange.

Action to Date

Coordination at Headquarters by establishment of ALMRS Project Office (BLM) with periodic information exchange with Ted Albert, Data Administrator, USGS, Reston, Virginia. Coordination at field level by the detail of one member of the USGS Information Systems Division, 50 percent of the time, to assist BLM in design and programming of land descriptions/status data base and system, and one position, full-time from the USGS National Mapping Division to assist BLM in design of user requirements for coordinate values from Public Land Survey System. Various staff members in National Mapping Division, USGS, Reston, devote from 5-10 percent of their time to ALMRS project.

USGS is currently collecting digital line graphs for the Public Land Survey System. These data are stored in the National Digital Cartographic Data Base and are of multipurpose use. BLM can acquire digitized Public Land Survey System data from the NDCDB at a fraction of the cost USGS incurred in collecting the data because USGS will recover their costs from multiple sales. This will result in approximately \$3 million savings to BLM over the cost of single purpose data collection. Through the Interior Digital Cartography Coordinating Committee BLM will keep USGS apprised of their priority needs and USGS will keep BLM apprised of their production schedules.

In addition USGS is developing a Federal Mineral Lands Information System (FMLIS) designed to help fulfill their earth resource assessment mandate by integrating disparate data such as Federal surface and subsurface ownership, mineral occurrence and potential, and legal restrictions to mineral development as well as other resource data. The coordination between ALMRS and FMLIS will be of substantial benefit to both agencies. FMLIS will utilize digital land description/status data from ALMRS along with mineral occurrence and mineral potential data from the USGS Mineral Resources Data System and the Conterminous U.S. Mineral Appraisal Program (CUSMAP). Also, FMLIS will be able to provide BLM with mineral resource and other data for use in their land use and land management planning activities at the regional and/or state level.

USGS is currently developing data standards relating to the Public Land Survey System which will be sent through the Department of the Interior for approval.

USGS will help develop program plans for Phase III of ALMRS and has offered to develop and implement Phase III of the project.

An electronic mail system has been established for ALMRS using the USGS system. Handling registration on the system for BLM personnel is Mike McNeill, Chief, Division of Information Systems, BLM, 1129 20th Street, Room 331, Washington, D.C.

A slide-tape presentation has been developed and made available to other agencies to inform management of the functions of ALMRS, as well as possibilities for usage by their agency. One of a series of these presentations with additional hands-on technical training was provided to USGS personnel on May 6, 1983.

4. Bureau of Indian Affairs (BIA):

Need

Common interest in development of compatible data bases for ALMRS (BLM) and Production Accounting and Auditing System (PAAS) (MMS) Royalty Management program to insure ease of data exchange. Would be end-user of cadastral survey information.

Action To Date

Have conducted coordination at BLM Headquarters through the ALMRS Project Office (WO-105). Coordination is also ongoing with field level personnel to insure compatible data elements where needed.

At this time, BIA has an automated system called LRIS (Land Records Information System). This system is tied to legal description based on Indian allotment. It furnishes the legal description, history of the allotment and ownership (heirship). It is further tied to the BIA financial management system. Phase I of LRIS provides data for tabular reports and information for day-to-day allotment operations. Phase II involves geographic spatial plotting based on USGS 7 1/2 minute topographic maps. BIA also has IRMS (Individual Resource Management System) which is tied to LRIS.

The LRIS system is in use at this time but has no capability for casework tracking. BIA may want to use the ALMRS program for this purpose in addition to using data made available by Phases II and III.

All royalty accounting (with the exception of the Osage Reservation) is performed by MMS. The BIA annual minerals production report is largely a product of MMS (PAAS) information.

ALMRS would not be a substitute for either LRIS or IRMS, but could be a complimentary effort.

Coordination will continue at both the WO and field level to determine if ALMRS can be used by BIA as a case (action) tracking device. ALMRS would also then aid in report generations.

5. National Park Service (NPS):

Need

National Park Service is in need of a land acquisition, land actions (easements, permits, etc.) tracking system. NPS may also be an end-user of cadastral survey information.

Action to Date

Have conducted coordination at BLM Headquarters through the ALMRS Project Office (WO-105). Special coordination has involved Federal Land Acquisition System.

National Park Service is in process of developing policies on their overall automated data system. There has been no field level (DSC) coordination to date. Any such contact should await determination of policy and standards at the WO level.

Coordination will continue to be very active at the WO level to determine how ALMRS can be used by NPS.

6. Bureau of Reclamation (LBR):

Need

Common interest in development of compatible data bases for ALMRS (BLM) and Production Accounting and Auditing System (PAAS) (MMS) Royalty Management program to insure ease of data exchange. Would be end-user of cadastral survey information.

Action to Date

Have conducted coordination at BLM Headquarters through the ALMRS Project Office (WO-105). Coordination is also ongoing at Denver Service Center level by a task force working to insure compatible data elements where needed.

As an interim measure, in order to provide information to the Asset Management Coordination Office via a computer based land data system as required by an MBO task, Reclamation has developed the capability to use ALMRS on a very restricted basis to generate reports on a few variables related to land disposal. Reclamation has been planning and designing its new Bureauwide ADP Land and Real Property System (LAPS). Reclamation is currently completing the land use inventory module, which will include land disposal variables, and the external

reporting module of LAPS. Both modules will track on a parcel and management area basis. LAPS is specific to Reclamation needs, but is being developed to employ data elements compatible with ALMRS when possible. ALMRS could not and would not substitute for LAPS but may be utilized by Reclamation as a compliment to LAPS.

Bureau of Reclamation - Bureau of Land Management Interagency Agreement, dated December 1982 (signed March 25, 1983) discusses interagency sharing of computer programming, time and other services as well as sharing compatible data when possible.

7. Fish and Wildlife Service (FWS):

Need

Common interest in development of compatible data bases for ALMRS (BLM) and Production Accounting and Auditing System (PAAS) (MMS) Royalty Management program to insure ease of data exchange. Would be potential user for oil and gas leasing (case tracking). Also, would be end-user of cadastral survey information and historical records on western refuges under withdrawal from BLM.

Action to Date

Have conducted coordination at BLM Headquarters through the ALMRS Project Office (WO-105). Coordination is also ongoing at Denver Service Center level by a task force working to insure compatible data elements where needed.

Fish and Wildlife Service has designed a system to track history and status as well as new actions on all parcels within the exterior boundary of each refuge. This system is in the latter stages of development.

At present, FWS has no system for tracking new actions on oil and gas leasing and mining claims on refuge lands. It is intended that the FWS system include information as to leases granted on refuge land. Also, as to lands withdrawn from the mining laws, mining claims will be entered into the system.

Since the recent opening of some refuge lands to oil and gas leasing, the FWS has acquired a need to track oil and gas leases. This function will be put into the FWS system.

8. Bureau of Mines (BOM):

Need

Common interest in the development of compatible data bases for ALMRS (BLM) and Mineral Land Assessment System (MLASS) (BOM) to insure ease of data exchange. -BOM would be an end-user of cadastral survey information for use in land withdrawal studies.

Action to Date

At this time, BOM is developing an automated system called Mineral Land Assessment System (MLASS). This system will tie study areas, sample analysis, and publications to the past and ongoing mineral land assessments performed by BOM.

9. Office of Surface Mining (OSM):

Need

Office of Surface Mining is in need of land status information to assist in review of permit applications for coal mining operations on Federal lands, as well as land status information on coal resources on all Federal land. OSM would be an end-user of cadastral survey information.

Action to Date

At this time, OSM has two automated systems: Abandoned Mine Lands (AML), project tracking information, in which 800-1000 inventory records are maintained and Program Operation and Inspections reports.

Interagency coordination within Interior and other interested agencies, primarily the Forest Service, is an ongoing dynamic part of the ALMRS program. As contacts are developed with known interested parties, other contacts have been revealed. On most occasions the new contacts are in other divisions of the same agency. In other cases, new agencies are mentioned as possible participants.

Another part of the ongoing coordination effort involves ALMRS training of involved agency personnel. A slide-tape presentation has been developed that is being made available both within BLM to acquaint our own personnel with the ALMRS program and other agencies to inform management of the functions of ALMRS as well as possibilities for usage by their agency. ALMRS team personnel are present at these showings to more fully explain the system and answer questions. Use of this presentation will be increased to meet demand as more individuals become involved in use of the ALMRS products. Technical hands-on training has already been made available to BLM State Offices, Washington Office (WO) and WO USGS personnel.

An overall coordination plan is in the development stages and is scheduled for completion in FY 1983. This plan will establish a format for meetings and list of contacts at WO, Denver Service Center, and the field-user level. This plan will specify who the contact is at each level, the phone number or address, the best method of contact (phone, personal visit, memo, etc.), the frequency of contact and items of specific interest to that individual or agency.

ALMRS PROJECT APPROACH AND IMPLEMENTATION PLAN

The overall approach to Bureauwide implementation of the ALMRS project is graphically displayed in Figure 1.

Phase I has been implemented Bureauwide. Data entry for all oil and gas cases will be completed by end of FY 83, and all other cases by the end of FY 84.

The data base for Phase II will be completed by the end of FY 84. At that time Phase I and Phase II capabilities will merge. All States will be entering case data in Phase II format even though all States will have not collected additional survey and status data necessary to begin Phase II.

Pilot Approach

Phase II will be piloted in New Mexico and Arizona. New Mexico was chosen because it has heavy lands and mineral case activity and a difficult administrative structure. Arizona, on the other hand, has little case activity and a rather simple administrative structure. The thought behind this approach was to define and address Phase II problems in Arizona and test the modified system in New Mexico.

By the end of FY 84 the following will have been accomplished:

- Phase II design will be essentially complete, with some programming for outputs still going on.
- Phase II data collection in New Mexico and Arizona will be completed.
- Training for Phase II will be completed in Arizona and New Mexico.

The Phase II pilot will begin in New Mexico and Arizona at the beginning of FY 85. The pilot will be monitored through FY 85 and at the end of FY 85 Phase II will be evaluated.

Phase III will also be piloted in New Mexico and Arizona. The goal is to ensure that all three phases are successfully operational before implementing the entire system Bureauwide.

By the end of FY 85 the following accomplishments will have been achieved:

- Phase III design will be essentially completed.
- Phase III data collection in New Mexico and Arizona will be completed.
- Training for Phase III will be completed in Arizona and New Mexico.

Phase III pilot will begin in New Mexico and Arizona at beginning of FY 86 and will be monitored throughout the fiscal year. Evaluation of Phase III will take place at the end of FY 86.

PROJECT APPROACH AND IMPLEMENTATION PLAN
(Summary of Codes Attached)*

ACTIVITY	FY 83	FY 84	FY 85	FY 86
PHASE I				
1. Rework	D-200 (4420) D-400 (4111)			
2. System Operation				
a. O/G entry	*SO RIPS (4111)	*SO		
b. Other lands & minerals	*SO	*SO		
c. system maintenance	D-200 (4420)	D-200 (4420)		
d. technical assistance	D-400 (4111)	D-400 (4212)		
3. Hardware (terminals & disk storage)	*D-200 Equip. (4420)			
PHASE II				
1. Determine User Requirements.	D-400 (4111) *USGS			
2. Design Phase II				
a. Conceptual	D-200 (4420)			
b. Data Base	D-400 (4111) *USGS			
c. Programming		D-200 (4420) *USGS		
d. Testing		D-200 (4420)		
3. Training			D-200 (4420)	
a. Packaging	D-400 (4111 & 4212) *AA-130			

*Not ALMRS Funded

ACTIVITY	FY 83	FY 84	FY 85	FY 86
PHASE II (cont'd.)				
b. Conduct: NM & AZ		D-400 *D-200	(4212) (records)	
c. Conduct: OR & UT			D-400 (4212) *D-200 (re- cords)	
4. Hardware				
a. NM & AZ	*D-200	Equipment (4420)		
1) tele.				
2) Level 6 Upgrade				
3) terminals & printers				
b. OR & UT		*D-200		
1) tele.		Equipment (4420)		
2) Level 6 Upgrade				
3) terminals & printers				
c. Procure DPS8 CPU	*D-200	Equipment (4420)		
5. Test Phase II AZ & NM				
a. Data Coll.		D-400 AZSO (4212) (4111) NMSO (4212)		
b. Tech. Asst.		D-400 (4212) D-200 (4420)		
c. Operations			*AZSO & NMSO	
d. Syst. Maint.			D-200 (4420) ADP, *D-200 Records	
*Not ALMRS funded				

ACTIVITY	FY 83	FY 84	FY 85	FY 86
e. Imp. Asst.			D-400 (4212)	
f. Evaluate			D-200 (4420)	
6. OR & UT			D-400 (4212)	
a. Data Coll.			AA-105 (4212)	
b. Tech. Asst.			*NMSO *AZSO	
c. Operations		ORSO (4212)		
7. WY Data Collection		UTSO (4212)		
		D-400 (4212)		
		D-200 (4420)		
			WYSO (4212)	
			D-400 (4212)	
			D-200 (4420)	
PHASE III				
1. Determine User Requirements				
2. Design Phase III	D-400 *USGS	(4111 & 4212)		
a. Conceptual			D-200 (4420)	
b. Data Base			D-400 (4212) *USGS	
c. Programming			D-200 (4420)	
d. Testing			*USGS	
3. Training			D-200 (4420)	
a. Packaging			*USGS	
b. Conduct: NM & AZ			D-400 (4212)	
c. Conduct: OR & UT			*USGS *AA-130	
4. Hardware			D-400 (4212)	
a. NM & AZ			D-400 (4212)	
b. OR & UT			*D-200	Records
			Equipment (4420)	

*Not ALMRS funded

ACTIVITY	FY 83	FY 84	FY 85	FY 86
5. Test Phase III AZ & NM				
a. Data Coll.				
b. Tech. Asst.			AZSO (4212) NMSO (4212) *USGS	
c. Operations			D-400 (4212) D-200 (4420) *USGS	
d. Syst. Maint.				
e. Imp. Asst.				
f. Evaluate				

*Not ALMRS funded

* SUMMARY CODES

4420
4111
4212
D-200

D-400

SO
AZSO
NMSO
ORSO
UTSO
WYSO
USGS
RIPS
AA-130

AA-105

Data Management
Oil and Gas
Non-Energy Realty
Denver Service Center,
Assistant Director,
Data Systems
Denver Service Center,
Assit. Dir., Technology
and Scientific Systems
State Office
Arizona State Office
New Mexico State Office
Oregon State Office
Utah State Office
Wyoming State Office
U.S. Geological Survey
Records Improvement Staff
Washington Office - Public
Affairs
ALMRS Staff

Bureauwide Implementation

Following pilot State implementation, other States will be phased into the program two at a time in the following order:

	Phase II	Phase III
Oregon and Utah	FY 86	FY 87
Wyoming and Nevada	FY 87	FY 88
Colorado and California	FY 88	FY 89
Idaho and Montana	FY 89	FY 90

Due to the magnitude of data collection needs and quality of existing survey data in Eastern States, this entity will be phased in over each of the fiscal years as funds are available in each year.

The justification for this schedule of implementation of each of the States is due to several factors, including:

1. Amount of existing data in a compatible form for ALMRS;
2. Expressed interest to utilize ALMRS as soon as possible;
3. Workload and case activity; and
4. Universal geographic coverage by ALMRS.

Data collection for each of the States will be done (for each Phase) 1 or 2 years prior to implementation. Equipment and training will be accomplished the prior year to prepare each State for phase implementation. In general, funds will be spent for data collection before equipment due to timing needs for data collection. Phase II data collection will occur in FY 84 for Oregon and Utah and Phase II equipment and training for these States will be obtained in FY 85. Phase III needs would follow in FY 86 for these States. Wyoming Phase II data collection would occur in FY 85 with equipment and training being obtained at Level C funding in FY 85 or in FY 86. Eastern States would receive funds for Phase II data collection at Level C in FY 85 and FY 86. The rest of the States would follow a similar course in the out years.

The overall project goal is that by 1991, the ALMRS program would be fully implemented in all States and would become part of normal Bureau operations.

With the exception of Alaska, all of the States fall under the administrative responsibility of the States listed.

TOTAL FUNDING REQUIREMENTS - ALMRS

Development	\$3 Million
Equipment	\$14 Million
<u>Data Collection</u>	<u>\$25 Million</u>
TOTAL COST	<u>\$42 Million</u>

Completion in FY 91 (present schedule) anticipates annual funding of approximately \$6.8 million.

Development and Implementation
of the

Automated Land and Minerals Management System
(All Costs on Thousands of Dollars)

FY	83	84	85
Program Management			
-Work Months	33	53	53
-Dollars	\$105.6	\$261.3	\$294.80
Development			
-Work Months	104	210	183
-Dollars	\$429	\$727.7	\$973.00
Technical Assistance			
-Work Months	19	12	30
-Dollars	\$60.2	\$42.7	134.0
Operation and Maintenance			
-Work Months	20	20	20
-Dollars	\$60	\$68.6	\$108.4
Equipment	\$210	\$1,164	\$1,778
-Dollars			
Telecommunications			
-Dollars		\$102	\$268
Target States			
-Work Months		1,124	207
-Dollars		\$4,057.2	\$3,066
Support			
-Work Months	87	38	47
-Dollars	\$290.2	\$146.5	\$217
Total Work Months		1,457	540
Total Dollars	\$1,155	\$6,570	\$6,840

Note: The following 11 pages present a more definitive analysis of the planned expenditures for FY 83, FY 84, and FY 85.

[illegible]

FY 83 NARRATIVE

FY 83
 Subactivity 4420
 Project ALMRS
 Date February 18, 1983
 Page 1 of 1

Subactivity: Data Management - ALMRS

A. Cost Target Summary:

1. Work Months	
# Permanent	120
# Other	0
Total WM	120
Average WM Cost	\$ 3,000
Total WM Cost	\$ 360,000
2. Equipment Cost	\$ 210,000

Total Cost Target

\$ 570,000*

B. Feedback on Program Cost Target:

This proposed cost target will be expended on the following tasks and accomplishments. Tasks appear under the specific workload elements.

<u>STAFF</u>	<u>TASKS</u>	<u>WMS</u>	<u>DOLLAR</u>	<u>ACCOMPLISHMENTS</u>
D-200	<u>Development:</u>			
	- Rework on Phase I	95	\$ 285,000	- Phase I complete
	- Conceptual Design of Phase II			- Phase II initiated
	- Initial Data Base and Programming Design of Phase II			
	<u>Technical Assistance:</u>			
	- Provide assistance to States during Phase I data entry	3	\$ 9,000	
	<u>Operation & Maintenance</u>	20	\$ 60,000	- Phase I in operation in all states
	- Provide system maintenance for Phase I			
	<u>Equipment:</u>			
	- Obtain equipment for Phase I (60 terminals and disk storage)	0	\$ 210,000	- Phase I equipment obtained
	<u>Support:</u>			
	- Provide administrative support	2	\$ 6,000	
	TOTAL	120	\$ 570,000	

*Includes leave surcharge

Subactivity: Oil & Gas Leasing - ALMRS

A. Cost Target Summary:

1. Work Months	
# Permanent	179
# Other	0
Total WM	179
Average WM cost	\$ 3,200
Total WM Cost	\$ 572,800
2. Equipment Cost	0
3. Miscellaneous Cost (Printing, Office Machinery and Furniture)	\$ 12,200
Total Cost Target	\$ 585,000*

B. Feedback on Program Cost Target:

This proposed cost target will be expended on the following tasks and accomplishments. Tasks appear under the specific workload elements.

<u>STAFF</u>	<u>TASKS</u>	<u>WMS</u>	<u>DOLLARS</u>	<u>ACCOMPLISHMENTS</u>
AA-105 ALMRS Project Office	<u>Program Management:</u> - Provide Washington Office oversight, management and coordination - Prepare project plans (life cycle; workload analysis; hardware needs) - Perform overall evaluation of project	33	\$ 105,600	- Phase I in operation in all states - Phase II initiated
D-400	<u>Development:</u> - Assist D-200 in rework of Phase I - Determine User requirements for Phase II - Initiate determination of User requirements of Phase III with USGS	45	\$ 144,000	- Phase I in operation - User requirements for Phase II identified
	<u>Technical Assistance:</u> - Provide technical assistance to states during Phase I operation - Initiate Phase II data collection (contracting process) for AZ and NM	16	\$ 51,200	- Support for states - Phase I data in system - Phase II data collection process initiated

*Includes leave surcharge.

FY 83 NARRATIVE

FY 83
 Subactivity 4111
 Project AIMRS
 Date February 18, 1983
 Page 2 of 2

Subactivity: Oil & Gas Leasing - AIMRS

<u>STAFF</u>	<u>TASKS</u>	<u>WMS</u>	<u>DOLLARS</u>	<u>ACCOMPLISHMENTS</u>
	<u>Training:</u> - Prepare training package for Phase II	18	\$ 57,600	- Training package Phase II training initiated
	<u>Support:</u> - Provide management and administrative support	18	\$ 57,600 \$ 10,000 (Misc.)	
D-140	<u>Support:</u> - Assist D-400 in training packaging, editing manuals and preparing briefings	4	\$ 12,800 \$ 2,200 (Misc.)	
RIPS Staff	<u>Cases:</u> - Entry of Oil and Gas cases in Phase I for states	45	\$ 144,000	- Support for cases so oil and gas cases entered by end of
	TOTAL	179	\$ 585,000*	

*Includes leave surcharge.

Subactivity: Data Management - ALMRS

A. Cost Target Summary:

1. Work Months	
# Permanent	489
# Other	0
Total WM	489
Average WM Cost	\$ 3,558
Total WM Cost	\$1,740,000
2. Equipment Cost	\$1,164,000
3. Telecommunications	\$ 102,000
Total Cost Target	\$3,006,000*

B. Feedback on Program Cost Target:

This proposed cost target will be expended on the following tasks and accomplishments. Tasks appear under the specific workload elements.

<u>STAFF</u>	<u>TASKS</u>	<u>WMS</u>	<u>DOLLARS</u>	<u>ACCOMPLISHMENTS</u>
D-200	<u>Development:</u>			
	- Design of Phase II data base & programming)	165	\$ 565,800	- Data Base Design of Phase II complete
	- Conceptual and Data Base Design for Phase III			- Phase III design initiated
	<u>Technical Assistance:</u>	3	\$ 10,300	- Support given to states so Phase I in operation and Phase II data collected for NM & AZ
	- Assistance to states during Phase II (survey and status) data collection			
	- Assistance to states during Phase I operation			
	<u>Operation & Maintenance:</u>	20	\$ 68,600	- Phase I in operation in states
	- System Maintenance for Phase I			
	<u>Equipment:</u>	0	\$1,164,000	- Equipment obtained for Phase II to support NM & AZ
	- Procure Phase II equipment for NM & AZ			
	- Procure CPU for DPS8 for data storage in central computer			

*Includes leave surcharge.

FY 84
 Subactivity 44
 Project ALMRS
 Date February 18, 1983
 Page 2 of 2

Subactivity: Data Management - ALMRS

<u>STAFF</u>	<u>TASKS</u>	<u>WMS</u>	<u>DOLLARS</u>	<u>ACCOMPLISHMENTS</u>
	<u>Telecommunications:</u>	0	\$ 102,000	
	- Obtain telecommunications need for NM & AZ			
	<u>Support:</u>	2	\$ 6,900	
	- Provide management and administrative support			
	<u>Township #:</u>			
Arizona State Office	- Collect new survey and status data for Phase III (3,472 townships)	211	\$ 767,600	- All Phase II data collected and system for AZ
	- Contract or in-house			
	- Administer contracts and oversee Phase II data collection (quality control)	55	\$ 199,800	
New Mexico State Office	- Administer contracts and oversee Phase II data collection (quality control). Part of this task is funded out of the 4212 subactivity.	33	\$ 121,000	
	TOTAL	489	\$3,006,000*	

*Includes leave surcharge.

Subactivity: Nonenergy Realty - AIMRS

A. Cost Target Summary:

1. Work Months	
# Permanent	968
# Other	0
Total WM	968
Average WM Cost	\$ 3,600
Total WM Cost	\$ 3,483,400
2. Equipment Cost	0
3. Miscellaneous Costs (Printing, Office Machinery and Furniture)	\$ 80,600

Total Cost Target

B. Feedback on Program Cost Target:

\$ 3,564,000*

The proposed cost target will be expended on the following tasks and accomplishments. Tasks appear under the specific workload elements.

<u>STAFF</u>	<u>TASKS</u>	<u>WMS</u>	<u>DOLLARS</u>	<u>ACCOMPLISHMENTS</u>
AA-105 AIMRS Project Office	<u>Program Management:</u> - Provide Washington Office oversight and coordination - Perform evaluations of project success	53	\$ 190,700 \$ 70,600 (Misc.)	- Phase II data collected for NM, AZ, OR & UT (14,648 total townships) - Phase II essentially complete (except for programming and test design) - Phase III initiated
D-400	<u>Development:</u> - Determine user requirements for Phase III - Assist in conceptual design of Phase III	45	\$ 161,900	- User requirements for Phase III identified - Phase III initiated
	<u>Technical Assistance:</u> - Provide assistance to states in data entry of lands and minerals cases (Phase I) - Provide technical assistance to AZ, NM, OR & UT during collection of survey and status (Phase II) data by providing quality control procedures	9	\$ 32,400	- Support given so Phase II data in system - Support given so Phase II data collected for AZ, NM, OR & UT (14,648 total townships)

*Includes leave surcharge.

Subactivity: Nonenergy Realty - ALMRS

<u>STAFF</u>	<u>TASKS</u>	<u>WMS</u>		<u>DOLLARS</u>	<u>ACCOMPLISHMENT</u>
	<u>Training (# Trained):</u>	18	S	64,800	
	- Complete packaging for training or Phase II				- AZ & NM training for use of Phase II
	- Train AZ & NM for use of Phase II				
	<u>Support:</u>	18	S	64,800	
	- Provide management and administrative support		S	10,000 (Misc.)	
	<u>Townships #:</u>				
New Mexico State Office	- Collect new survey and status data for Phase II (4,176 townships) Contract or in-house	254	S	915,600	- All Phase II data collected and system for NM
	- Administer contracts and oversee Phase II data collection (quality control) Part of this task is funded out of the 4420 subactivity.	33	S	118,400	
Oregon State Office	- Collect new survey and status data for Phase II (4,411 townships) Contract or in-house	269	S	967,400	- All Phase II data collected and system for Oregon
	- Administer contracts and oversee Phase II data collection (quality control)	70	S	251,800	
Utah State Office	- Collect new survey and status data for Phase II (2,589 townships) Contract or in-house	158	S	567,900	- All Phase II data collected and system for Utah
	- Administer contracts and oversee Phase II data collection (quality control)	41	S	147,700	
	<u>TOTAL</u>	968		\$ 3,564,000*	
		449			
		1457			

*Includes leave surcharge.

Subactivity: Data Management - AIMRS
A. Cost Target Summary:

1. Work Months	
# Permanent	190
# Other	0
Total WM	190
Average WM Cost	\$ 5,400
Total WM Cost	\$1,030,000
2. Equipment Cost	\$1,778,000
3. Telecommunications	\$ 268,000
Total Cost Target	\$3,076,000*

B. Feedback on Program Cost Target:

This proposed cost target will be expended on the following tasks and accomplishments. Tasks are listed under specific workload elements.

<u>STAFF</u>	<u>TASKS</u>	<u>WMS</u>	<u>DOLLARS</u>	<u>ACCOMPLISHMENTS</u>
D-200	<u>Development:</u> - Complete programming and test phase of Phase II - Complete Data Base design of Phase III - Implement programming phase of Phase III	165	\$ 894,500	- Phase II completed and in operation in New Mexico and Arizona - Data Base Design of Phase III complete
	<u>Technical Assistance:</u> - Evaluate results of Phase II in New Mexico and Arizona - Provide assistance to Oregon and Utah in collection of Phase II data and to AZ & NM in collection of Phase III data	3	\$ 16,300	- Decision made to proceed with Phase II and Phase III
	<u>Operation & Maintenance:</u> - Provide system maintenance of Phase II during pilot state (NM & AZ) operation	20	\$ 108,400	- Phase II in operation in New Mexico and Arizona

*Includes leave surcharge.

FY 85 Proposal

FY 85
 Subactivity 4420
 Project ALMRS
 Date February 18, 1983
 Page 2 of 2

Subactivity: Data Management - ALMRS

<u>STAFF</u>	<u>TASKS</u>	<u>WMS</u>	<u>DOLLARS</u>	<u>ACCOMPLISHMENTS</u>
	<u>Equipment:</u>			
	- Procure equipment for Phase II in Oregon & Utah and for Phase III for NM & AZ	0	\$1,778,000	- Phase II equipment obtained for Oregon and Utah - Phase III equipment obtained for NM
	<u>Telecommunications:</u>			
	- Provide telecommunications support for Phase II and III in NM, AZ and Phase II in Oregon and Utah	0	\$ 268,000	
	<u>Support:</u>			
	- Provide administrative support	2	\$ 10,800	
	TOTAL	190	\$3,076,000*	

*Includes leave surcharge.

Subactivity: Nonenergy Realty - ALMRSA. Cost Target Summary:

1. Work Months	
# Permanent	
# Other	350
Total WM	0
Average WM Cost	350
Total WM Cost	10,500
	\$3,690,300
2. Equipment Cost	\$ 0
3. Miscellaneous Cost (Printing, Office Machinery)	\$ 73,700
Total Cost Target	\$3,764,000*

B. Feedback on Program Cost Target:

This proposed cost target will be expended on the following tasks and accomplishments. Tasks are listed under specific workload elements.

<u>STAFF</u>	<u>TASKS</u>	<u>WMS</u>	<u>DOLLARS</u>	<u>ACCOMPLISHMENTS</u>
AA-105 ALMRS Project Office	<u>Program Management:</u> - Provide Washington Office coordination and oversight - Evaluate results of Phase II operation in New Mexico and Arizona	53	\$231,080 \$ 63,700 (Misc.)	- Phase II in operation in NM & AZ - Decision to proceed with Phase II and III made - Phase III initiated
D-400	<u>Development:</u> - Assist D-200 in design of Phase III <u>Technical Assistance:</u> - Provide implementation to NM & AZ during Phase II - Provide assistance to NM & AZ during collection of coordinate (Phase III) data by providing quality control procedures	18 27	\$ 78,480 \$117,720	- Data Base Design of Phase III complete and programming essentially complete - Phase II in operation in New Mexico and Arizona FY 85 - Support for New Mexico and Arizona so Phase III data is collected (for 7,648 townships) - Support for Wyoming State Office during Phase II data collection (for 3,711 townships) - Decision to proceed with Phase II and III made

*Includes leave surcharge.

Subactivity: Nonenergy Realty - AIMIS

<u>STAFF</u>	<u>TASKS</u>	<u>WMS</u>	<u>DOLLARS</u>	<u>ACCOMPLISHMENTS</u>
D-400	- Provide technical assistance to Wyoming State Office during collection of Phase II data			
	- Evaluate results of Phase II operation in NM & AZ			
	<u>Training (4)</u>			
	- Train NM & AZ for use of Phase III	27	\$ 117,720	- New Mexico and Arizona trained for use of Phase III
	- Train Oregon and Utah for use of Phase II			- Oregon and Utah trained for use of Phase II
	<u>Support:</u>			
	- Provide administrative and Management support	18	\$ 78,480 \$ 10,000 (Misc.)	
Arizona State Office	<u>Townships (2)</u>			
	- Collect coordinate data for 3,472 townships	3	\$ 669,480	- Phase III data collected for Arizona (3,472 townships)
	- Oversee collection of Phase III data	62	\$ 272,920	
New Mexico State Office	- Collect coordinate data for 4,176 townships	3	\$ 804,480	- Phase III data collected for New Mexico (4,176 townships)
	- Oversee collection of Phase III data	77	\$ 335,320	
Wyoming State Office	- Collect survey & status data (Phase II) for 3,714 townships	2	\$ 726,520	- Phase II data collected for Wyoming (3,714 townships)
	- Oversee collection of Phase II data (quality control)	60	\$ 258,100	
	<u>TOTAL</u>	350	\$3,764,000*	

*Includes leave surcharge.

Table 1

Phase I - Case Management System

INPUTS/DATA ELEMENTS	OUTPUTS/PRINTED REPORTS	RESULTANT CHANGES IN CURRENT RECORDKEEPING*	EQUIPMENT
Serial Number Case Type Acres Commodity Cashier's No. Receipt No. Collection Method Code-Fund Symbol Amount Proprietor ID No. Name Address City Zip Name Category Interest Relationship Percent Interest Meridian Township Range Section Type Survey Number Survey Number Suffix Subdivisions Surface Management Agency Action Code Action Date Action Remarks Pending Action General Remarks	Serial Register Page Case Abstract Receipt and Accounting Advice Serial Number Index Proprietor Index Location Index Caseload Management Report Case Aging Report Mineral Leasing Report	1. <u>Case Receiving and Recordation Data Entry:</u> Data entry time is reduced from 127 minutes to 20.9 minutes saving 106.1 minutes (\$25.47) per case. 2. <u>Data Maintenance, Records Up-dates for Case Processing:</u> On a benefit assumption of 115,000 cases and a manual time of 10 minutes reduced to 5 minutes per case by automation, the 5 minutes saving per case at \$.23 a minute is \$1.15 per case or \$132,250 per year. 3. <u>Program Case Count Reporting:</u> Based upon discussions with States, report preparation is estimated to take 412 work-months in 11 administrative states (excluding Alaska). A savings of 80 percent of these workmonths is estimated when the Phase I data is automated. The 330 workmonths saved is valued at \$2,400/MM and amounts to a \$792,000 benefit which can be redirected to lands and minerals case processing. This is 30 minutes and \$16.89 per case when applied to the 115,000 new cases.	Honeywell 66/80

*C/B figures are preliminary, and subject to revision.

Table 1 (Continued)

Phase I - Case Management System

INPUTS/DATA ELEMENTS	OUTPUTS/PRINTED REPORTS	RESULTANT CHANGES IN CURRENT RECORDKEEPING	EQUIPMENT
		<p>4. <u>Case Tracking:</u> Reduced circulation of the physical case file is anticipated when case data are accessible to users through computer terminals. State estimates of reduced case retrieval search time and time savings for accessing case data together are 5 minutes per case per year for each of the 115,000 active cases. This is an annual benefit of \$132,250.</p> <p>5. <u>Reduced Time for Responding to Public/Client Inquiries:</u> Many inquiries about active cases can be satisfied by automated outputs. Automated output lists of case closings and applications by case type and case data queries can reduce time that BLM personnel spend in answering questions, pulling files, etc. The benefit assumption for this savings is based upon information from State Offices, additional savings at District Offices will be realized when these offices have data retrieval equipment. The benefit is that the BLM minutes per contact can be reduced from 6 to 3 minutes at \$.23 min. and that inquiries</p>	

Table 1 (Continued)

Phase I - Case Management System

INPUTS/DATA ELEMENTS	OUTPUTS/PRINTED REPORTS	RESULTANT CHANGES IN CURRENT RECORDKEEPING	EQUIPMENT
		<p>5. (continued)</p> <p>will be received on 50 percent of our new case file (115,000 X .50 = \$57,500). The 3 minute savings per inquiry contact at \$.23/min. results in annual savings of \$39,675.</p>	

Phase II - Case Management/Land Records System

INPUTS/DATA ELEMENTS	OUTPUTS/PRINTED REPORTS	RESULTANT CHANGES IN CURRENT RECORDKEEPING	EQUIPMENT
<p>All data described in Phase I</p> <p>Additional Case Mgt/Utilization Mgt. Data</p> <p>Appraised Value</p> <p>Selling Price</p> <p>Unit of Measure</p> <p>Number Units</p> <p>Potential New Data Elements for Case Mgt/Utilization</p> <p>Lease Amendment Number</p> <p>List Number e.g. SOG 83 -1</p> <p>Unit Number e.g. SOG 83 -1</p> <p>Parcel Number</p> <p>Communization Agreement No.</p> <p>Rate/Unit of Measure (\$/ton etc.)</p> <p>Type of Money (Bond, Payment, Appraised Value etc.)</p> <p>Recommend to Expand Fund Code to Cover these types:</p> <p>Tract Number (File No.)</p> <p>Acquisition Project No.</p> <p>Project Title</p> <p>Land Description Data</p> <p>Meridian</p> <p>Township</p> <p>Ranges</p> <p>Section</p>	<p>Case Abstract</p> <p>Serial Register Page</p> <p>Land and Mineral Case Activity for Period (date) to (date)</p> <p>Case Aging Report as of (date)</p> <p>Authorization Issued and Acres for Period (date) to (date)</p> <p>Serial Numbers of Cases with Requested Specifications as of (date)</p> <p>Pending Action Summary by Case Type, Action, Organization as of (date)</p> <p>List of Authorization Assignment Actions for Period (date) to (date)</p> <p>Caseload Progress for Period (date) to (date)</p> <p>Case File, Tracking and Action List as of (date)</p> <p>Title I Rights-of-Way Sec 28 MLA Report to Congress for Period (date) to (date)</p>	<p>Adds the capability to:</p> <ul style="list-style-type: none"> - Validate legal land description data in new case applications; - Assist adjudication by automatically adjusting total acres in cases as land availability is determined; - Provide more comprehensive reporting; - Retire the Historical Index as townships are automated and brought "on line"; - Shorter case processing time will enable clients to save approximately 3 months per application and will eliminate the possibility of tying up funds in pending applications. 	<p>Designed around use of the State's Level-6 mini-computers as an input and storage device. The B-66/80 in DSC will be used to store the IDS Data Base. Data from the Level-6's will be transferred nightly for batch updating to the host computer.</p> <p>An on-line retrieval capability will be required so that short reports and queries can be answered immediately.</p> <p>Large or complex reports will be produced in batch mode.</p> <p>Use of Phase II will be extended to all Bureau offices so that each District and detached Resource Area Offices will have as a minimum</p>

Table 2 (Continued)

Phase II - Case Management/Land Records System

INPUTS/DATA ELEMENTS	OUTPUTS/PRINTED REPORTS	RESULTANT CHANGES IN CURRENT RECORDKEEPING	EQUIPMENT
Aliquot Parts Lots Special Surveys Survey Type Survey Number Suffix Acres Survey Note County Congressional Dist BLM Admin Unit Surface Management Agency Stipulations	Lease Permit, Easement and Grant Activity for Period (date) to (date) Title Transfers for Period (date) to (date) Location Index (More than 9 townships) Location Index (1-9 townships) Future BLM Action Tickler List for Period (date) to (date) (limited area)		one CRT terminal and one slow printer. Each State Office will have additional terminals and printers
Land Status Data *	Future BLM Action Tickler List for Period (date) to (date) (area up to Adm St) Case list by Disposition Class and Proprietor Name as of (date) Land Description List of Closed Cases for Formulation of future SIMO leases, Serial Number Sequence. Land Description List of Closed Cases for Formulation of Future SIMO leases, Land Sequence Land Description List for Formulation of SIMO leases, Land Sequence		
Serial Number Location Data Meridian Township Range Section Subdivision Survey Type Survey Number Acres Case Type Document I.D. Document Category Case Disposition Commodities Lease/Permitted Claimed (4 max) U.S. Rights Intitle Transfer for commodities) Surface Owner			

Table 2 (Continued)

Phase II - Case Management/Land Records System

INPUTS/DATA ELEMENTS	OUTPUTS/PRINTED REPORTS	RESULTANT CHANGES IN CURRENT RECORDKEEPING	EQUIPMENT
Subsurface Owner Agency Surface Segregation Subsurface Segregation Resource Codes Geographic Name Width of Right-of-Way Effective Date General Remarks * Limited to data which is now recorded on MTP and III. Other data such as Resource Management Data and Segregation Offer of Withdrawals and clas- sifications may be added at a later date.	SIMO Land Description List in Future Lease Serial Number Sequence Simultaneous Oil and Gas Filling Activity for Period (date) to (date) Withdrawals and Revocations for Period (date) to (date) Recreation and Public Purposes for Period (date) to (date) (Quarterly) Proprietor Name Index as of (date) Serial Number Index as of (date) Mineral Patent Applications, FY # Commodity Value Index as of (date) Continuing energy Mineral Leases, Licenses, Permits on PD as of (date) Continuing Non-energy Mineral Leases, Licenses, Permits on PD as of (date)		

Table 2 (Continued)

Phase II - Case Management/Land Records System

INPUTS/DATA ELEMENTS	OUTPUTS/PRINTED REPORTS	RESULTANT CHANGES IN CURRENT RECORDKEEPING	EQUIPMENT
	<p>Mineral Patents Issued by Commodity, FY # _____</p> <p>Noncompetitive Mineral Authorizations Issued, FY # _____</p> <p>Withdrawals and Revocations for FY # _____</p> <p>Receipt</p> <p>Activity in Mining Locations, PL 167 & 359, FY # _____</p>		

Table 3

Phase III - Geographic Information System

INPUTS/DATA ELEMENTS	Report	Format	Retrieval	RESULTANT CHANGES IN CURRENT RECORDKEEPING	EQUIPMENT
<p>Each coordinate will be identified by:</p> <ul style="list-style-type: none"> - latitude - longitude - elevation - source of coordinates - agency (BLM, NGS, USGS, State, county, etc.) - source material (photography, maps, scale and accuracy) - date of acquisition - point of identification - cross-referenced to parcel/aliquot part - polygon (parcel) identifier (ties coordinates to a unique parcel in the Bureau GIS and record system) - coordinate Reliability Class (Standard Accuracy Classes) <p>Initial data loading obtained from:</p> <ul style="list-style-type: none"> - National control network survey data from NGS and USGS 	<p>An Interactive multi-purpose/multiuse system called Geographics Coordinate Data Base of the Public Land Survey System (GCDB/PLSS) for:</p> <ul style="list-style-type: none"> - storage - retrieval - dissemination - updating of geographic coordinates <p>Reports may vary by site depending upon sophistication of equipment.</p>	<ul style="list-style-type: none"> - tabular - magnetic tapes - graphic plots - user requests may run from simple (1-3 coordinates) to extensive (total data base). 	<p>On-line by:</p> <ul style="list-style-type: none"> - state - county - meridian - township - range - section - aliquot part/meter & bounds - latitude and longitude - window - point identifier 	<ul style="list-style-type: none"> - Automation of geographic coordinate position data for legal land description boundaries; - Provides for additional automation of adjudication processing and visual displays of complete or selected status now shown on the MTP, use plats and tract book plats; - Graphic outputs will replace Master Title and use plats; - Standardization of computer generated reports for easy analysis of information of all Bureau users; - As more reliable coordinates are collected, previously collected coordinates will be replaced; - Selection and standardization of mathematical adjustment procedures of survey data for uniform coordinate accuracy within the designated adjustment unit; 	<p>Additional equipment will be needed in field offices to update land description boundary data and in turn the coordinates necessary to retrieve and display status plats on graphic computer terminal screens, screen copiers and plotters. New or modified computer and telecommunication</p>

Table 3 (Continued)

Phase III - Geographic Information System

INPUTS/DATA ELEMENTS	OUTPUTS			RESULTANT CHANGES IN CURRENT RECORDKEEPING	EQUIPMENT
	Report	Format	Retrieval		
<ul style="list-style-type: none"> - Cadastral survey data available upon completion of projects - Digitized maps, providing interim coordinates until survey data can be obtained. 				<ul style="list-style-type: none"> - Standardized reliability classification for accuracy of the PLSS coordinates; - Capability to interface with other agencies and private sector and a saving to each user of approximately 2 minutes per query; - BLM will save approximately 5617 workmonths per year once all three phases are fully operational Bureauwide which will enable the Bureau to focus attention on maintaining a system free of backlogs, totally efficient, streamlined, up to date, and responsive to all user needs; and - Further system capabilities will be evaluated during the design phase. 	<p>systems will be needed to properly support phase III implementation.</p>

Appendix 3

Information Memorandum 82-261

Land Status Records/Case Processing Automation Project

August 17, 1982



United States Department of the Interior

BUREAU OF LAND MANAGEMENT
WASHINGTON, D.C. 20240

1260/1275 (104)

Affects *D-200*

Inst.

Memo

82-585

D-100
D-120
D-130
D-140
D-200
D-220
D-240
D-250
D-400
D-410
D-420
D-440
D-470
D-480
D-490
D-500
D-510
D-530
D-540
D-550
LIB
RF

August 17, 1982

Information Memorandum No. 82-261

Expires 9/30/83

To: All WO and Field Officials

From: Director

Subject: Land Status Records/Case Processing Automation Project

Instruction Memorandum No. 82-585 of July 23, 1982, advised of the decision to proceed with the Lands Status Records/Case Processing Automation Project. It identified the members of the Standing Committee for Automation (Standing Committee) and established the State Office Representatives Committee (S.O. Representatives Committee), composed of personnel assigned by State Directors to represent each State Office on the committee.

The S.O. Representatives Committee is made up of the following personnel:

<u>STATE</u>	<u>REPRESENTATIVE</u>	<u>FTS NUMBER</u>
Alaska	Jerry Zamber	907-271-5055
Arizona	Mario Lopez	261-6027
California	Skip Robinson	468-4014
Colorado	Bob Dinsmore	327-4712
Eastern States	Jim Horan	235-8851
Idaho	Vince Strobel	554-1407
Montana	Gene Russell	585-6078
Nevada	Dick Morrison	470-5703
New Mexico	Tom Adler	476-6174
Oregon	Harold Berends	429-6904
Utah	Bob Anderson	588-5320
Wyoming	Lloyd Eisenhower	382-2059

There will be a meeting of the Standing Committee/S.O. Representatives Committee on August 19-20, 1982, at the Denver Service Center. The purpose of the meeting is twofold:

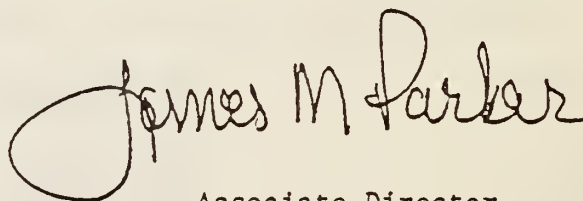
1. To explain the Director's recent program and budget decisions, and;
2. To continue the formulation of user requirements.

You will be given a briefing package covering item #1 so that you will be able to explain the program to others in your State who will assist you in this project.

Our plan for item #2 is to use the field representatives to assist the Standing Committee in establishing the output products, identifying the processing capability required, and setting priorities for implementation. We plan to assign each representative to a small work group. Each work group will be assigned a segment of the system and will be responsible for developing the specifications for that segment.

The segments will then be forwarded to the Denver Service Center (DSC) staff for preparation of the final user requirements document. This document will be reviewed by the field representatives and the Standing Committee. The final product will be used by the DSC staff as system design specifications. This effort will begin immediately after the August 19 meeting with the goal of a final product by January 1983.

Inquiries concerning motel reservations should be made to Herb Runkle at FTS 234-5122. Any other questions should be referred to Larry Montross at FTS 343-7753.

A handwritten signature in dark ink, reading "James M. Parker". The signature is fluid and cursive, with a large, looping initial "J" and "P".

Associate Director

Appendix 4
Director's Decision Decision
July 9, 1982



United States Department of the Interior

BUREAU OF LAND MANAGEMENT
WASHINGTON, D.C. 20240

JUL 9 1982

D-220
Jim

Memorandum

To: Deputy Director, Management Services
Special Assistant to the Director (102)

From: Director

Subject: Land Status Records/Case Processing Automation Project

I concur with and endorse the enclosed Decision Document for the Land Status Records/Case Processing Automation Project.

To ensure program continuity in this project effort, each office is to implement program responsibilities as outlined in the decision document.

Due to the ever increasing activities on lands managed by the Bureau, i.e., the Oil and Gas and Asset Management Programs, the use of automation provides us with a tool to bring about improved efficiency of operations.

As discussed during the briefing, I look forward to receiving in the near future a brief schedule showing time frames and estimated costs for the 1983, 1984 and 1985 fiscal years. More specific decisions will be considered at that time.

A large, handwritten signature in black ink, which appears to read "Robert J. Burroughs", is located in the lower right quadrant of the page.

Enclosure

LAND STATUS RECORDS/CASE PROCESSING AUTOMATION PROJECT DECISION DOCUMENT

I. Land Status Records and Case Processing Automation Policy

The Bureau will proceed on the premise that it will automate the Land Status Records and Case Processing for the purpose of providing benefits to BLM operations, the public and other agencies.

Comment _____

Approve _____

Disapprove _____

II. Land Status Records Case Processing System Maintenance (Direction)

The Bureau can make a phased transition from its manual system to an automated system.

Recommendation:

Phase out those Bureau manual systems as certain parts of the automated system are tested and proven.

Comment _____

Approve _____

Disapprove _____

III. Management (Direction)

This automation effort is a priority Bureauwide project that focuses on:

- o Supporting Oil and Gas needs for automated lease records and adjudication
- o Supporting Asset Management
- o Making the Bureau's Lands and Case Records more efficient, accessible, and ultimately less expensive to maintain (some developmental work done, i.e., Trial Project and Alaska Land Records Automated System)

Comment _____

Approve _____

Disapprove _____

Recommendation:

If the policy directive is to proceed with Land Status Case Processing Automation Project, then a proven project management approach is needed to assure appropriate planning, scheduling, resources and strategy. The Life Cycle Management (LCM) approach is the method to be used. (Division of Information Systems will provide appropriate guidance on LCM.)

- o By August 2, 1982, the Project Management Plan needs to be completed with known cost and schedule restraints identified for FY'83, FY'84, and FY'85, plus the life of the effort.

Comment _____

Approve _____

Disapprove _____

IV. Organization (Direction)

A Land Status Automation Case Processing Management Committee has been established to provide policy recommendations to the Director. There needs to be an organizational sub-structure identified to execute and assure project deadlines are met.

Recommendations:

- o The Chairman of the Land Status Case Processing Automation Committee is the Project Manager, responsible for policy and operations.
- o The SCD is to assign a representative responsible to the Project Manager for standards, daily guidance, State uniformity and development of Life Cycle Management for the project.
- o The SDs are responsible for the implementation of the automation of Land Status Case Processing System. They are to assign a SO manager or project leader to specifically lead the project, assure proper use of resources dedicated to the project (and report SO needs, priorities, and problems to the project manager).

Comment _____

Approve _____

Disapprove _____

V. Project Direction

All BLM States need to automate their Land Status Records and ultimately, Case Processing. The System is to include:

- o Current Case Status (in progress)
- o Summary Information, i.e., reports, workload measurements, etc. (in progress)
- o Current Land Survey
- o Current Land Status
- o Graphics

Recommendation:

Continue to implement the automation of new applications, pending applications, existing leases, and use authorizations.

Comment _____

Approve _____

Disapprove _____

Recommendation:

Schedule to implement the project under four major and subsequent stages:

- o Capture the Oil and Gas Land Status Records
- o Capture the Asset Management Status Records
- o Capture the Land Status Records for other priority areas
- o All other Public Domain Townships

Comment _____

Approve _____

Disapprove _____

Recommendation:

Because of the uniqueness of its Land Status Record data/information, except for report purposes at this time, Alaska is to continue on with its current automation effort and not be considered as part of this project.

Comment _____

Approve _____

Disapprove _____

Recommendation:

Because ESO's Townships do not include Master Title Plats and Historical Indexes, a separate project management plan is to be submitted to cover priority townships (ESO has 7,500 O&G; 21,792 PD townships). This is to be completed by August 2, 1982, by DSC.

Comment _____

Approve _____

Disapprove _____

VI. System Direction

Currently, the Bureau does not retain the computer processing ability to support automation of the Bureau's Land Status Records. It is anticipated that a computer upgrade (major conversion) is feasible within 3-5 years. Interim measures must be established to support current project requirements.

Recommendations:

Initiate Land Status Automation for FY 83 using the same approach employed with the Mining Claim Recordation effort; however, instead of direct on-line entry to the DSC H 66/80, a Bureauwide application needs to be developed that allows entry of daily data into the SO Level-6, so that it may be transmitted to DSC during the night for batch processing.

In FY 84, prepare to have the H 66/80 computer reconfigured to provide the interim processing capability available until the Bureau can complete its major system upgrade (anticipated to be completed by FY 87).

Comment _____

Approve _____

Disapprove _____

VII. System Design (Policy)

The major system upgrade is to focus on complete decentralization. This means that the States should have independent processing ability to support their Land Status Records Automation program. The Bureau's Land Status-Records reside in the SOs. It is important that the design for automation consider this.

Recommendation:

The design for Land Status Automation should reflect a decentralized approach. This means that emphasis on personnel resources and future hardware is to be directed to the States' operations.

Comment _____

Approve _____

Disapprove _____

VIII. Outside Support (Direction)

The Bureau should not attempt to automate its Land Status Records/Case Processing without considering outside offers of support.

Recommendation:

USFS, USGS, and MMS have high interest in the automation of Land Status Records. The Bureau should solicit their participation in the project. Since the Bureau has a current MOU with USGS for joint support in automation, USGS should participate with the Bureau from the outset. The desire to participate needs to be sought from other agencies as well.

Comment _____

Approve _____

Disapprove _____

IX. Resources (Direction)

The Bureau needs to accurately assess its manpower and hardware requirements for this project. In addition, we need to consider the cost differential between completing work in-house versus by contract.

Recommendation:

The Bureau may have the potential to redistribute over-ceiling personnel in DSC and certain States to support this Bureauwide project. BLM should consider the cost of using its own experienced personnel before employing contract services. The project management plan needs to address the benefit of each and report before proceeding.

Comment _____

Approve _____

Disapprove _____

Date

Director

Appendix 5
Benefit/Cost Analysis for the
Automated Land and Mineral Record System
(ALMR'S)
Revised July 1983

DRAFT

A BENEFIT/COST ANALYSIS FOR THE
AUTOMATED LAND AND MINERAL RECORD SYSTEM (ALMRS)

REVISED JULY 1983

BUREAU OF LAND MANAGEMENT

I. INTRODUCTION

This report describes the benefits of the Automated Land and Mineral Record System (ALMRS) and the results of a benefit/cost analysis.

Previous reports have described various aspects of the system. The "Project Management Plan for Automation of a Land and Minerals Management System", report dated July 26, 1982, developed the project costs used in this analysis as Table 10 and 12 through 14. Cost data is derived from a Trial Project where functions and time analyses were conducted.

This revision reduces benefits and changes the initial August 9th report by:

- ° Lowering the value of reduced work month costs from \$3,000 to \$2,400 for all benefits to reflect a more accurate estimate for State Offices.
- ° Reducing benefits derived from automation of the Master Title Plat because this benefit is attributed elsewhere to regulatory change and use of alphanumeric data listing for the MTP, a graphic product.
- ° Incorporating benefit estimates by the Lands and Minerals staffs in the Headquarters Office.
- ° Reallocation of costs from earlier to later years due to budget revisions.
- ° Incorporates State Office benefit estimates for Phase III.

Two kinds of benefits derived from the ALMRS system are described in this report. The first is direct benefits to the Bureau of Land Management in cost avoidance where time and cost benefits are needed to do other land, mineral and records work. The second kind of benefits accrue to non-BLM users of this data, i.e., the private sector, applicants, and other agencies as a result of automating records and case processing.

The ALMRS system is designated to replace the manual system of Serial Register Pages, Master Title and Use Authorization Plats and Historical Indexes for townships. The automated data includes legal land description, title and use authorization status, geographic coordinate positions and stipulations applicable by land description location in authorization. Case files and the Control Document Index will continue to be used.

The automated data will be used to produce a variety of automated outputs eliminating some labor and redundant manual steps. Benefits are also gained by faster case processing, automated program summaries, faster service to clientele and automated transfer of data to the Simultaneous Oil and Gas, and other lists and the financial management system.

Benefits to the Bureau are developed in Part II and benefits to non-BLM users are discussed in Part III. State and Headquarters estimates of benefits have been incorporated with Trial Project benefits experience.

Automation of data, quantity and costs, and the benefits analyses by phase and year are shown in Part IV.

II. DESCRIPTION OF BUREAU BENEFITS

System implementation and benefit estimates are for 11 administrative states and exclude Alaska which is operating a separate system at this time.

All costs and benefits are estimated at 1982 actual values and future year values are discounted to 1982 values for benefit/cost ratio. Labor benefits use \$2,400 per work month, which is \$13.85 per hour, or \$0.23 per minute.

A. Phase I, Case Receiving and Reporting

This phase provides for entry of Oil and Gas cases plus all new cases received in State Office after June 1, 1982. Table 1 is developed from data published in Public Land Statistics tables and 1984 budget document data. Numbers of cases in the adjudication case load at the beginning of the fiscal year and new cases opened during the year are estimated by case type. The benefit analyses use data from this table.

Table 1. Case Processing Workload Estimated for FY 1984 and Used for All Years

Case Type	First Year Case Inventory	Cases Opened	Total
Lands			
Application	7,400	5,000	12,400
Rights-of-Way	3,100	5,000	8,100
Bureau Motion ¹	-	5,000	5,000
Subtotal	<u>10,500</u>	<u>15,000</u>	<u>25,500</u>
Mineral			
O&G: Application	10,000	30,000	40,000
Assignment	10,000	60,000	70,000
Other Minerals	-	3,000	3,000
Subtotal	<u>20,000</u>	<u>93,000</u>	<u>113,000</u>
Total	<u>30,500</u>	<u>108,000</u>	<u>138,500</u>

Phase I data are being automated on a case basis and not on an area basis. Oil and Gas cases are in approximately 28,504 townships² of 45,862 townships where the Federal Government has a title interest in the surface and/or the subsurface estate.

¹ Bureau Motions include exchanges, RMPP, and Asset Management sales

² USDI, Bureau of Land Management, Denver Service Center "Project Management Plan for Automation of a Land and Mineral Management System July 26, 1982, Table 8."

1. Case Receiving and Recordation Data Entry: This work is labor intensive in the manual system and current manual methods involve duplication of data entries. A comparison of steps follows:

Manual:

- ° Date and time stamp case
- ° Prepare, Type Entries to
 - Serial number log
 - Serial Register Page
 - Accounting Advices
 - Name Index
 - Transfer Control Card
 - Distribution of Case Data
- ° Notation of records
 - NTPP
 - HI
 - Use Plats

Automated:

- ° Date and time stamp case
- ° Enter case data on computer terminal
 - case type, acres
 - Accounting data
 - Name, Address
 - Legal Land Description
 - Action, dates
- ° Initiate production of required automated outputs
- ° If necessary, note record of action

Table 2 develops the Phase I data entry costs for manual and automated methods by case type. Benefits of the 108,000 new cases (Table 1) amount to \$1,833,100. Data entry time is reduced from 132 minutes to 20.5 minutes saving 73.78 minutes (\$16.97) per case.

Table 2. Phase I Data Entry: New Cases, Times and Benefits

Case Type	Number of New Cases per Year (FY 84 base)	Minutes per Case Manual/Automated	Savings per Case Minutes/Dollar @ \$0.23/min.	Total Dollar Savings
Lands				
Application	5,000	135 / 20	115 / \$26.45	\$ 132,250
R/W	5,000	140 / 20	120 / \$27.60	138,000
Bureau Motion:				
Sales	<u>5,000</u>	150 / 30	120 / \$27.60	<u>138,000</u>
Subtotal, Wt. Avg.	15,000		118.35/\$27.32	\$ 408,250
Minerals				
O&G:				
Application	30,000	135 / 20	115 / \$26.45	\$ 793,500
Assignments	60,000	60 / 20	40 / \$ 9.20	552,000
Other	<u>3,000</u>	135 / 20	115 / \$26.45	<u>79,350</u>
Subtotal	93,000			\$1,424,850
Total, Wt. Avg.	108,000	132 / 20.5	73.78/\$16.97	\$1,833,100 ¹

¹ Numbers assume that Phase II is in place and notation of plats is automated

2. Data Maintenance, Records Updates for Case Processing: Updates to individual case records are required for case processing activities and necessary for reporting. Table 1 itemizes this workload as 108,000 cases. This work also includes recording new actions to land and mineral cases received both the current and prior years and pre- and post-authorization activity. This benefit excludes mining claims and other SRP maintenance since these have a system operation and are not part of Phase I or an already automated case activity.

The benefit assumption is 108,000 new cases (from Table 1) and a manual time of 10 minutes reduced to an estimated 5 minutes per case by automation. The 5 minutes saving per case at \$.23 a minute is \$1.15 per case or \$124,200 per year.

3. Program Case Count Reporting: Report preparation is labor intensive and estimated (based upon discussions with States) to take 200 work months in 11 administrative states (excluding Alaska). A savings of 80 percent of these work months is estimated when the Phase I data is automated. The 180 work months saved is valued at \$2,400/WM and amounts to a \$432,000 benefit. This is 17 minutes and \$4.00 per case when applied to the 108,000 new cases.

4. Case Tracking: Reduced circulation of the physical case file is anticipated when case data are accessible to users through computer terminals. State estimates of reduced case search time-and-time savings for accessing case data together are 5 minutes per case per year for each of the 108,000 active cases (Table 1). This is an annual benefit of \$124,200.

5. Reduced Time for Responding to Public/Client Inquiries: Many inquiries about active cases can be satisfied by automated outputs. Automated output lists of case closings and applications by case type and case data queries can reduce time that BLM personnel spend in answering questions, pulling files, etc.

The benefit assumption for this savings is based upon information from State offices, additional savings at district offices will be realized when these offices have data retrieval equipment. The benefit assumes that the BLM minutes per contact can be reduced from 6 to 3 minutes at \$.23/min. and that inquiries will be received on 50 percent of our new case file ($108,000 \times .50 = 54,500$). The 3 minute savings per inquiry contact at \$.23/min. results in annual savings of \$37,260. See Table 7 page 10 for a summary of benefits.

B. Phase II. Case Processing with Land Description and Status Data

Phase II includes a comprehensive set of legal land description data and administrative/political area data. Cumulative land and mineral cases defining current Federal land title rights and use authorizations for townships containing lands in which the Federal Government has some title interest are also automated.

Implementation of Phase II continues the features and benefits of Phase I. Phase II adds the capability to validate legal and land description data in new case applications, summarize case acres and adjust total acres in cases as lands are added or deleted, and automate steps in the adjudication process. Outputs include a more comprehensive set of reports for areas where status is automated.

The manual records, Historical Index and Serial Register Page, can be retired as townships are automated and brought "on-line."

Phase II captures all relevant current legal land description and status data for an area except plat coordinate positions. Data from Phase I, oil and gas, mineral and land cases, and other program specific active cases, will be incorporated with the Phase II data without further data collection.

Other land status and legal land description data sources include alphanumeric data from Master Title and other plats, Historical Indexes, Serial Register Pages, Survey plats and case files.

Stipulations applicable to various case types, oil and gas, public land sales, and others may be derived from land use plans, environmental analyses and environmental impact statements. These are related to specific land areas and can be retrieved and included in status reports produced for adjudication of specific areas.

1. Automated Adjudication Aids: Automation of land description validation and automation of some of the adjudication logic to produce a status report on lands and minerals rights for lands in a new case will save adjudicator time and in turn shorten case processing time.

Numbers of cases by type, adjudication aids and annual benefits are developed in Table 3.

Table 3. Adjudication Aids Benefits

Case Type	No. of New Cases Per Year (Tbl.1)	Annual Minutes Saved per case				Benefits	
		Validate Land Descript	Acreage Compil Report	Adjudic Analysis	Total	Dollars S.23/min Per case	Total
Lands							
Applications	5,000	20	10	95	125	\$28.75	\$ 143,750
Rights-of-Way	5,000	20	5	95	120	27.60	138,000
Bureau Motion	5,000	10	10	105	125	28.75	143,750
Subtotal	15,000						\$ 425,500
Average					123	\$28.37	
Minerals							
Oil & Gas							
Applications	30,000	20	20	60	100	\$23.00	690,000
Assignments	60,000	5	15	10	30	6.90	414,000
Other	3,000	20	20	95	135	31.05	93,150
Subtotal	93,000						1,197,150
Average					56	\$12.87	
Total	108,000						
Average					65.3	\$15.02	1,622,650

2. Application of Surface Management Agency (SMA) Stipulations: Bureau and other SMA stipulations applicable to legal land description areas can be associated with lands in a lease application on the automated system.

The benefit from automated search for, and application of, these stipulations to applications is 15 minutes per case and applicable to 30,000 cases. This is a \$3.45 saving per case or \$103,500 Bureauwide.

3. Statistical Reporting for all Status Cases: Case counting reports for all active cases and all cases involved with current status of land and mineral title rights and use authorizations. These benefits are in addition to the initial Phase I benefits.

Automated reporting benefits for current status cases is estimated to be 1 position or 10 work months at \$2,400/WM, for each of the 11 administrative states. For the estimated 500,000 current status cases per State, this is \$24,000 per State, 0.21 minutes or \$0.048 per case, for a total of \$264,000.

4. Reduced BLM Time of Queries. Inquiries about inactive cases(not active cases which are covered in Phase I) will also benefit from reduced BLM access and use time and less time required for assisting the public in using records data.

The benefit for an estimated 150,000 queries is a 2 minute BLM time saving for each, this \$.46 saving per query is \$69,000 annually for the Bureau.

C. Phase III. Case Processing with Geographic Coordinate Positions and Plat Graphics

Phase III is distinguished by automation of geographic coordinate position data for legal land description boundaries. This provides for additional automation of adjudication processing, and visual displays of complete or selected status now shown on the Master Title Plat, Use Plats and Tract Book Plats. This requires entry of coordinates for points on perimeters of land description areas and integration with land status data via legal land descriptions. Additional equipment is needed in field offices to update land description boundary data, turn the coordinates necessary to retrieve and display status plats on graphics computer terminal screens, screen copiers and plotters.

Features of Phases I and II are integrated with Phase III and when all the necessary data are converted from manual to automated format the manual records both alphanumeric and Plats for townships can be retired.

Conversion of plats from manual use format to automated involves acquisition of available coordinates data (e.g., USGS coordinates for section corners), digitizing and mathematical calculations of subsection and other legal land description areas.

A case specific graphic status display, now a map or plat for an area, can also be output by the computer as an exhibit for a title or use authorization case, or as an adjudication aid.

Maintenance of automated plats will provide current graphic status outputs at any user site having the necessary graphics equipment. Adjudicators will benefit from graphic display of status in non-standard public land survey situations and for various proximity analyses.

1. Avoidance of Plat Restoration: Automation of plats will permit retirement of physical plats and avoidance of refurbishing costs. This involves 54,954

Master Title Plats and 38,883 Use Plats in 10 administrative states (excludes Alaska and Eastern States). These numbers approximate respectively the total number of townships (55,963) and the number of townships in which the Federal Government has land and mineral interests (38,790). Eastern States has an additional 22,174 Public Land Survey townships, 6,419 with current Federal Government interest. The total numbers of plats are estimated to be 77,128 for Title/Tract Plats and 45,302 Use Plats a total of 122,430 plats.

Half of the plats (61,215) are in archival condition leaving 61,215 plats requiring restoration maintenance. A 10-year program indicates restoration of 6,122 plats per year, 5 percent requiring complete redrafting (306 @ 12 hr @ \$.23/min. for \$50,674) and 95 percent restored by photocopy techniques (5,816 @ 60 min. @ \$.23 for \$80,261), a total annual benefit of \$130,935. A weighted annual averaged benefit for the 6,122 plats is 92 minutes of \$21.16 per plat.

2. Avoidance of Manual Plat Update. Automated graphic displays of plats can be made and annotated with case data without manual updating beyond entry of the alphanumeric data of legal land description by survey areas for cases. Table 4 develops this benefit by case type, number of cases and minutes for manual and automated methods. Savings result from automating line displays on the basis of the numeric data instead of drafting or digitizing. Time saved and number of the weighted benefit is 38 minutes or \$8.69 per case for 99,600 cases. Benefits vary widely by case type as shown in table 4:

Table 4. Title/Use Plat Update Maintenance Benefits

Case Type	No. of New Cases			Cases-Minutes Plat Maint					Benefit Amount \$.23/min per case
	Opened	Pct. Auth & Update	Net for Plat Maint.	Manual		Auto	Min-savings		
				Case	Min	Case	Min	Man-Auto	
Lands									
Applications	5,000	20	1,000	1,000	60	1,000	10	50,000	\$ 11,500
Right-of-Way	5,000	90	4,500	4,500	60	4,500	15	202,500	46,575
Bureau Motion	5,000	100	5,000	5,000	60	5,000	10	250,000	57,500
Subtotals	15,000		10,500	10,500		10,500			
Minutes				630,000		127,500		502,500	
Dollars									\$115,575
Average		92			60		12		
Minerals									
O&G Appl.	30,000	90	27,000	27,000	60	27,000	10	1,350,000	\$310,500
Assign	60,000	99	59,400	59,400 ¹	10	59,400	10	0	0
Other	3,000	90	2,700	2,700	60	2,700	10	135,000	31,050
Subtotals	93,000		89,100	89,100		89,100			
Cases									
Minutes				2,376,000		891,000		1,485,000	
Dollars									\$341,550
Total									
Cases	108,000		99,600	99,600		99,600			
Minutes				3,006,000		1,018,500		1,987,500	
Dollars									\$457,125

¹Limited Plat modification requirement, serial number change, Land Description change.

3. Automated Plat Aid to Adjudication: Early stages of plat automation will apply position and proximity analysis to adjudication without extensive automated distribution of interactive graphic outputs. When required graphics equipment is available visual displays of selected/total status will also aid adjudicators. Benefit assumptions are shown in Table 5.

The weighted average benefit for 48,000 cases is 76 minutes and \$17.54 per case.

Table 5. Automated Plat Aid to Adjudication

Cast Type	# of Cases With Benefits	Savings		Total
		minutes/case	\$/case @ \$.23/min	
Lands				
Applications	5,000	120	\$27.60	\$138,000
Rights-of-Way	5,000	120	27.60	138,000
	0	-	-	-
Bureau Motion	5,000	60	13.80	69,000
Subtotal	15,000			\$345,000
Minerals				
O&G: Applications	30,000	60	13.80	\$414,000
Assignments*	0			
Other	3,000	120	27.60	82,800
Subtotals	33,000			\$496,800
Total	48,000		\$17.54	\$841,800
Average		76		

*Assignments are not currently noted on the plats

4. Automated Plat Aids to Producing Maps of Land, Mineral, and Resource Related Programs: objective planning, resource related and compliance type map production will result in savings of 25 work months per State. This \$60,000 per State totals \$660,000 savings for the Bureau.

5. Automated Plat Aid to Cartography: ALMR data and geographic coordinate position data for land descriptions can be used to produce surface and subsurface cartiographic products. A savings of 40 work months, \$96,000 for each of 11 administrative states estimated by state personnel. This is an annual Bureau benefit of \$1,056,000.

6. Automated Plat Aid to Land Surveying: Use of ALMR data, geographic coordinates and status, and Public Land Survey System data can save 10 work months, \$24,000, per state per year in survey functions. This is an annual benefit of \$264,000 as estimated by state personnel.

7. Reduced Time for Queries Involving Plats: Bureau use of title--tract and use plats and Bureau assistance to public use of these plats will be faster with user site graphic terminal access plat queries. Estimated plat queries by BLM and public user categories and kind of office (SO, DO, RA) and extended by plat queries numbers of offices are shown in Table 6. State personnel estimate Bureauwide accesses per day at 24,650 or 6.1 million per year. A 2 minute savings, \$.46 per query on only 50 percent of Bureau accesses, 2,150,000, gives an annual BLM benefit of \$989,000.

Table 6. Bureau and Non-Bureau Master Title and Use Plat Use

User Office Type No. Ofc. (11 St.)	Use by Office Type			Use/Day by Office			Total
	SO 11	DO 50	RA 156	SO	DO	RA	
Bureau Land Management							
Uses/Day	400	100	50	4,400	5,000	7,800	\$ 17,200
Uses/Year				1,100,000	1,250,000	1,950,000	4,300,000
Uses with Savings (50 percent)							2,150,000
Savings Amount 2 min/use @ .23/min.							\$ 989,000
Non-BLM Use							
Other Govt.	20	10	-	200	500	-	\$ 720
Commercial/Indus.	400	30		4,400	1,500	-	5,900
Other Public	30	10		330	500	-	830
Use/day Subtotal	450	50		4,950	2,500		7,450
Uses/year							\$1,862,500
Uses with Savings (50 percent)							\$ 931,250
Savings Amount 2 min/use @ \$.23/min							\$ 428,375

D. Summary of Bureau Benefits.

Bureau benefits by phase and system total are summarized in Table 7 from preceding sections. Weighted average unit savings, time and amount, shown here are developed in earlier sections.

Table 7. Bureau Benefit Summary

Benefit by Phase	Units	Weighted Minutes,	Average Amount	Annual Benefit
Phase I: Case Receiving and Reporting				
1. Case Receiving and Recordation	108,000 cases	73.8 min.	\$16.97	\$1,833,100
2. Data Maint., Records Updates	108,000 cases	5 min.	1.15	124,200
3. Case Count Reporting	108,000 cases	17 min.	4.00	432,000
4. Case Tracking	108,000 cases	5 min.	1.15	124,200
5. Reduced Time for Inquiries	54,000 queries	3 min.	.69	37,260
Subtotal				\$2,550,760

Phase II: Case Processing with Land Description and Status Data

1. Automated adjudication Aids	108,000 cases	65 min.	\$15.02	\$1,622,650
2. Application of SMA Stipulations	30,000 cases	15 min.	3.45	103,500
3. Statistical Reporting	5.5 Mil. cases	.21 min.	0.048	264,000
4. Reduced Time for Inquiries	150,000 queries	2 min.	.46	69,000
Subtotal				\$2,059,150

Phase III: Case Processing with Coordinate Positions and Plat Graphics

1. Avoidance of Plat Restoration	6,122 plats	92 min.	\$21.16	\$	130,935
2. Avoidance of Man. Plat Update	99,600 cases	20 min.	4.59		457,125
3. Automated Plat Aid to Adjudic.	43,000 cases	85 min.	19.55		841,800
4. Automated Plat Aid to L&M MBO	11 Adm St	25 WM	\$60,000/St		660,000
5. Aut. Plat Aid to Cartography	11 Adm St	40 WM/St	\$96,000/St		1,056,000
6. Aut. Plat Aid to Land Surveying	11 Adm St	10 WM/St	\$24,000/St		264,000
7. Reduced Time for Inquiries Involving Plats:	2,150,000 queries	2 min/ query	\$.46/ query		989,000
Subtotal					\$4,398,860
Total Bureau Benefits					\$9,003,770

Summary	Annual Benefits	Federal Estate Townships	Average Benefits/Townships
Phase I	2,550,760	45,862	\$ 55.62
Phase II	2,059,150	45,862	44.90
Phase III	4,398,860	45,862	95.92
	9,008,770		\$196.44

III. DESCRIPTION OF NON-BLM BENEFITS AND SAVINGS

Non-BLM benefits include values to the public and clients using the BLM records and making applications for title to or use of Federal lands.

A. Phase I. Case Receiving and Reporting

1. Public Access to Active Case Data: Automation of case data and the provisions for public retrieval of such data at various Bureau field offices aids clients in their planning. Several indexes and reports can be available to the public containing total caseload and daily activity reports. It has not been feasible for the Bureau to produce these reports for active cases manually. Public use reports respond to needs and uses for commonly sought data, case indexes, cases opened and closed by case type and location.

The public/client benefit for better access to case processing activity reports could be estimated using numbers of cases, or applicants or number of queries. The Bureau side of this issue (Part I A.5) used the latter, 1100 queries per day. Public benefits for each automated query are estimated to be at least 5 minutes each. Using the same \$.23 benefit per minute saved and 250 days the total benefit of public time saved is \$1.15 per query, \$1265 per day and \$316,250 per year.

B. Phase II, Case Processing with Land Description and Status Data

1. Applicant Benefit, Shorter Case Processing: Bureau processing of applications, assignments and status requests in a shorter time provides a value to all clients, i.e., funds are not tied up in pending applications, knowledge of title ownership or use can be obtained from BLM in a more timely and consistently accurate manner, etc. The client benefit assumption of \$100 per case (based upon applicant interviews) is considered a conservative value for a 3 month calendar time reduction for case processing. Applied to only one-half of the new cases per year, 57,500 this benefit totals \$5,750,000.

2. Forest Service Access to Current Status: A benefit assumption of a \$500,000 cost avoidance is provided by the Forest Service, Region on, for access to Automated Bureau Status Records. A conservative estimate, one-half of this \$1,875,000. The U.S. Fish and Wildlife Service and other agencies would also benefit but no estimate of such benefits is assumed or included in this analysis.

3. Improved Data Access: Faster access to our direct every capability case types(s) will benefit non-Bureau users of our records. State estimates on closed cases (in addition to Phase I active case querie) are expected to save 5 minutes, \$1.15, for each query. This is a \$189,750 benefit Bureauwide.

C. Phase III, Case Processing With Coordinates and Plat Graphics

1. Benefits for Non-Bureau Users: Users, Commercial, Industrial, individuals and other Government users having access to automated plats and the capability to selectively retrieve data by area, case type and action criteria are significant. This benefit corresponds to the Bureau Phase III savings in Item C10, data is developed in Table 7. Non-Bureau plat use is estimated at 7,450 accesses per day or 1.862 million per year. A 2 minute, \$.46, benefit on half of this plat use is \$428,375 per year.

D. Summary of Non-Bureau Benefits

Non-Bureau Benefits in the preceding sections are summarized in Table 8 below.

Table 8. Non-Bureau Benefit Summary

Benefit by Phase	Units	Weighted Savings		Annual Benefit
		Time	Amount	
Phase I: Case Receiving and Reporting ¹				
1. Public Access to Active Case Data	queries 275,000	5 min/query \$1.15/query		\$316,250
Subtotal Phase I				\$316,250
Phase II: Case Processing with Land Description and Status Data				
1. Applicant Benefit, Shorter Case Processing	cases 54,000	12 wks/case, \$100/case		\$5,400,000
2. Forest Service Access to Current Status	Mil. Ac 181	4.3 WM's/Mil. ac \$10,387/mil. ac.		1,875,000
3. Improved Data Access	queries 165,000	5min/query \$1.15 query		189,750
Subtotal Phase II				\$7,464,750

¹There are 28,504 Oil and Gas townships where benefits are \$11.01 township. Phase I benefits are actually derived on a case basis, not a township basis, and are achieved in FY-84.

Table 8. Non-Bureau Benefit Summary (cont.)

Benefit by Phase	Units	Weighted Savings Time / Amount	Annual Benefit
Phase III: Case Processing with Coordinates and Plat Graphics			
1. Plat Benefits to Non-BLM users	queries 931,250	2 min/query \$.46/query	\$ 428,375
Subtotal Phase II			\$ 428,375
Total Non-Bureau Benefits			\$8,209,375

Summary	Annual Benefits	Federal Estate Townships	Average Benefits/Township
Phase I	316,250	45,862	\$ 6.90
Phase II	7,464,750	45,862	162.77
Phase III	428,375	45,862	9.34
	<u>8,209,375</u>		<u>\$ 179.01</u>

IV. SCHEDULING OF IMPLEMENTATION, COSTS AND BENEFITS

Costs by Phases were originally developed for this system in the Project Management Plan report of July 26, 1982. The cost data in Tables 9 and 10 use the same costs per township although the amounts are reallocated to different years than in the cited report. This is due to revised funding levels for FY 83 through FY 90.

Application of data conversion costs results in the townships of data conversion schedule and cumulative automated data shown in Table 11. Phase II data conversion is estimated to cost \$286 per township and Phase III data conversion \$250 per township. This data is also from the Project Plan cited above.

Table 12, shows the implementation scheduling with cumulative automated data, costs and Bureau and non-Bureau benefits by year. Phase I costs are also included in this table. Future year values in this table are discounted to 1982 values and benefit/cost ratios computed.

Benefit/Cost Ratio analyses Tables 13 and 14 use 12 and 7 percent discount rate respectively. This may be viewed as requiring a B/C ratio greater than 1.0 while requiring a return of these rates on the costs (development), equipment and conversion of data to automated format and system operation) or for risk.

The B/C ratio analysis has been made at both 12 and 7 percent discount rates and for 10 years and 20 years. The 20 year analyses projected costs and benefits in years 11 through 20 to be the same as in year 10. See Table 12, 1992.

The B/C ratios are 96 percent higher for total benefits than for Bureau only benefits in both the 7 and 12 percent analysis and the 10 and 20 year periods.

Table 9. Summary of Available Resources (000's)

FY	83	84	85	86	87	88	89	90	Total
Program Mgt.									
-Work Months	33	53	53	53	53	53	53	0	
-Dollars	\$105.6	\$261.3	\$294.8	\$295	\$295	\$295	\$295	\$000	
Development									
-Work Months	140	210	183	0	0	0	0	0	
-Dollars	\$429	\$727.7	\$973						
Tech. Asst.									
-Work Months	19	12	30	30	30	30	30	0	
-Dollars	\$60.2	\$42.7	\$134	\$134	\$134	\$134	\$134		
O&M									
-Work Months	20	20	20	20	20	20	20	0	
-Dollars	\$60	\$68.6	\$108.4	\$250	\$400	\$550	\$700	\$923	
Equip.									
-Dollars	\$210	\$1,164	\$1,778	\$2,000	\$2,500	\$2,000	\$1,500	0	
Telecom.									
-Dollars	0	\$120	\$286	\$300	\$300	\$300	\$300	0	
Target States									
-Work Months	0	1,124	207	390	390	390	390	0	
-Dollars		\$4,057.2	\$3,066	\$3,644	\$3,001	\$3,344	\$3,694		
Support									
-Work Months	87	38	47	47	47	47	47	0	
-Dollars	\$290.2	\$146.5	\$217	\$217	\$217	\$217	\$217		
Total									
-Workmonths	299	1,457	540	540	540	540	540	0	4,456
-Dollars	\$1,155	\$6,570	\$6,840	\$6,840	\$6,840	\$6,840	\$6,840	\$923	\$42,848

Note: It is anticipated that resource availability will be constant from FY-85 through FY-89; however, the allocation of the resources will vary from year to year. The above estimates are subject to future revision.

Table 10 Costs By Phase (000's)

Fiscal Year	83	84	85	86	87	88	89	90	Total	Cost/Township ²
Phase II										
Development	\$ 230	270	108	0	0	0	0	0	545	\$ 11.88
Equipment	404	1,343	1,544	323	323	265	0	0	4,202	91.62
Data Conversion ¹	397	4,638	2,585	2,366	2,261	1,375	0	0	13,622	297.02
Subtotal	\$1,031	6,188	4,237	2,689	2,584	1,640	0	0	18,369	400.52
Phase III										
Development	\$ 124	382	506	294	0	0	0	0	1,306	28.48
Equipment	0	0	1,613	1,643	3,032	2,477	2,147	0	10,912	237.93
Data Conversion	0	0	484	2,214	1,224	2,723	4,693	923	12,261	267.35
Subtotal	\$ 124	382	2,603	4,151	4,256	5,200	6,840	923	24,479	533.76
TOTAL	\$1,155	6,570	6,840	6,840	6,840	6,840	6,840	923	42,848	934.28

¹Terminals also used in Phase I. Phase I data conversion costs for O & G cases and cases received in SO's after 6/82 are not included in this table.

²There are currently 45,862 townships where the Federal Government has a title interest in the surface and/or the subsurface estate.

Table 11. a Conversion by Phase, Amount By Year And Cumulative

Fiscal Year Phases	83	84	85	86	87	88	89	90	91	Total
I Oil & Gas & other cases received SO's after 6/1/81	150,000	40,000								\$190,000
II Land description and status data conversion										
Twps Initiated ³	2,238	15,700	8,407	7,692	7,353	4,472				45,862
Twps Completed	0+	2,238	15,700	8,407	7,692	7,333	4,472			45,862
III Coordinates Plats										
Twps Initiated ⁴	0	0	1,800	8,236	4,552	10,127	10,127	3,692		45,862
Twps Completed	0	0	0+	1,800	8,236	4,552	10,127	17,455	3,692	45,862
Cumulative Data Automation										
I Case Data O&G and other (on parts of 28,504 Twps)										
No. of cases	210,000	250,000	2	2	2	2	2	2		250,000
II Land description and status data										
No. of Townships	0+	2,238	17,938	26,345	34,037+	41,390+	45,862	45,862	45,862	45,862
III Coordination/plat for points on perimeter of land description areas										
No. of Townships	0	0	0+	1,800+	10,036+	14,588+	24,715+	42,170+	45,862	45,862

¹Include 60,000 cases automated by Phase I in FY 1982

²Data for Phase I cases combined with Phase II Status Data as Townships are automated. Phase I benefits continue as shown in Table 12.

³Land description and status data automation, \$286/Twp

Table 12. Data Quantity, Costs and Benefits by Year and Phase (\$000's)

Fiscal Year	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	TOTAL (10 Yr) 108,000
DATA AUTOMATED BY PHASE1											
I. Recordation/Reports, Cases	138,500	108,000	108,000	108,000	108,000	108,000	108,000	108,000	108,000	108,000	108,000
II. Land Descrip/Status, Tmps	0	2,238	17,938	26,345	34,037	41,390	45,862	45,862	45,862	45,862	45,862
III. Coordinates & Plat, Tmps	0	0	0	1,800	10,036	14,588	24,715	42,170	45,862	45,862	45,862
COSTS: CAPITAL (DEVELOP- EQUIP-DATA CONV 2											
II	1,031	6,188	4,237	2,689	2,584	1,640	0	0	0	0	18,369
III	124	382	2,603	4,151	4,256	5,200	6,840	923	0	0	24,479
Subtotal Capital Cost	1,155	6,750	6,840	6,840	6,840	6,840	6,840	923	0	0	42,848
OPERATION AND MAINT I	100	100	100	100	100	100	100	100	100	100	1,000
II	0	0	50	100	150	200	250	300	400	400	1,850
III	0	0	0	50	100	150	250	350	500	500	1,900
Subtotal Oper/Maint	100	100	150	250	350	450	600	750	1,000	1,000	4,750
TOTAL COSTS	1,255	6,670	6,990	7,090	7,190	7,290	7,440	1,673	1,000	1,000	47,598
BENEFITS: BLM (COSTS AVOIDED) I ³	2,143	2,551	2,551	2,551	2,551	2,551	2,551	2,551	2,551	2,551	25,102
(at \$196/Tmp/yr) II ⁴	0	100	805	1,183	1,524	1,838	2,059	2,059	2,059	2,059	13,706
III ⁴	0	0	0	172	962	1,399	2,371	4,041	4,399	4,399	17,743
Subtotal BLM Benefits	2,143	2,651	3,356	3,906	5,037	5,808	6,981	8,651	9,009	9,009	56,551
NON-BLM BENEFITS I ⁵	265	316	316	316	316	316	316	316	316	316	3,109
(at \$179/Tmp/yr) II ⁶	0	385	3,083	3,174	5,299	7,115	7,465	7,465	7,465	7,465	48,916
III ⁶	0	0	0	17	94	136	231	394	428	428	1,728
Subtotal Non-BLM Bene	265	701	3,399	3,507	5,709	7,567	8,012	8,125	8,209	8,209	53,153
BLM And NON-BLM I	2,408	2,867	2,867	2,867	2,867	2,867	2,867	2,867	2,867	2,867	28,211
II	0	485	3,888	4,357	6,823	8,973	9,524	9,524	9,524	9,524	62,622
III	0	0	0	189	1,056	1,535	2,602	4,435	4,827	4,827	19,471
TOTAL BENEFITS	2,408	3,352	6,755	7,413	10,746	13,375	14,993	16,826	17,218	17,218	110,304
BENEFET/COST RATIOS: BLM ONLY 1.71	0.40	0.48	0.48	0.55	0.70	0.80	0.94	5.17	9.01	9.01	1.18
(Undiscounted by yr, 10 yrs) ALL 1.92	0.52	0.97	0.97	1.05	1.49	1.83	2.02	10.06	17.22	17.22	2.32

¹From Cumulative Number of Townships Completed in Table 11

²From Table 10

³From Table 7,

⁴From Table 7 and Cumulative Number of Townships Completed in Table 11

⁵From Table 8, see footnote 1

PROJECT MANAGEMENT PLAN
FOR
AUTOMATION OF A LAND AND MINERALS MANAGEMENT SYSTEM

July 26, 1982

DENVER SERVICE CENTER
BUREAU OF LAND MANAGEMENT

1. INTRODUCTION

This project management plan presents a management level summary of activity on an Automated Land and Mineral Management System in fiscal years 1983-1985. This report responds to a request for an implementation plan by the Land Status Case Processing Automation Committee (LSCPAC). The plan omits justification rationale which has been covered in previous papers and meetings.

This plan is based upon the Director's July 9, 1982, Decision Document and the following tentative funding levels furnished by the committee.

FY 1983: \$2 Million for field equipment and field data conversion plus up to 190 workmonths of Service Center development effort.

FY 1984: \$6 Million for central computer upgrades and field data conversion plus up to 190 workmonths of Service Center development effort

. FY 1985: \$5 Million for field data conversion plus up to 190 workmonths of Service Center Development effort.

The automated system includes case recordation/reporting land description/status data, and coordinate/plat graphics.

II. DESCRIPTION

A. An Overview

The automated system replaces the manual Historical Index and Master Title Plat system in the Western states and comparable records in the Eastern States.

Case Recordation/Reporting provides for the entry of case application information into a data base for storage, retrieval, case counting and statistical reports.

Land Description/Status Data processes case data against land description, current status and proposed lease stipulations to produce an adjudication analysis and draft use authorization or title documents.

Coordinate/Plat Graphics is an interactive information system for storage, retrieval and updating of geographic data and land status in graphic form. It will provide current computer generated Master Title Plats and the various spatial analysis necessary for case adjudication.

Case processing and statistical report processing development assumes that land description, administrative/political area and case data including coordinate position data for boundary points will be automated concurrently. Case processing software development will be phased to utilize data as it is converted to automated format by the implementation step of the system development life cycle.

The system accomodates all land records activity on all lands where the BLM has surface or subsurface responsibility. This includes other agency lands where BLM is the authorizing agency and private lands where there is a retained Federal government interest. Modular Phases will provide early capabilities with priority case types such as Oil and Gas and Asset Management.

The system includes automated examination of status cases currently affecting Federal title and use authorizations to assess the presence or absence of conflicts relative to a pending case being adjudicated.

The system includes case progress tracking data and produces summary statistics and management reports on demand.

The system provides for data contributions by other agencies and/or their use of the system by receiving various outputs.

Interim design criteria uses State Office computers as data entry, edit and retrieval devices with processing done on an upgraded Service Center computer. This plan does not include provisions for future equipment and personnel requirements for a decentralized and distributed processing system scheduled for the late 1980's. Provisions will be made to facilitate distributed processing the decentralized system where appropriate.

This plan provides for alphanumeric data entry, update and retrieval from all BLM offices expected to process land and minerals cases. Graphics data entry, update and retrieval capabilities are provided to all State Offices and selected high activity District Offices. All BLM offices are provided with the capability to retrieve and display both alphanumeric and plat graphics data.

B. System Characteristics

- * Provide secure, accurate and consistent data.
- * Provide efficient and improved accessibility to a complex set of land status records.
- * Provide economies in terms of work force level and productivity, and space required to use and maintain status records in an era of increasing Land and mineral case activity.
- * Decrease rate of record deterioration due to use and age by providing access with automation.
- * Reduce response time for case processing and providing summary data to BLM managers, other agencies and public clientele.
- * Provide land description, status and position data in a variety of formats (screen display, printed list, plotted map, map display on a terminal screen) not presently available in a reasonable time.
- * Provide current records data at locations other than the BLM State Office.
- * Be easy to use with limited training and with no computer programming skill requirement.

- * Faster updating and maintenance of status records.
- * Provide for direct inquiry of data by clients through terminals in the public room, field offices and other locations.
- * Provide extensive use on-line interactive processing to enter, retrieve, update and output data and report products.
- * Provide batch processing for large reports not economically feasible with on-line processing.
- * Specific activities in State and District Offices will change as procedures are integrated, and some functions are replaced by automated procedures. Some tedious and duplicated tasks will be eliminated.

III. ORGANIZATIONAL ROLES

- * Headquarters, Field Committee, and the LSCPAC provides management, funding coordination and policy direction.
- * State Office secures data entry of all current cases and Oil and Gas backlog with Service Center and Contractor support for backlog entry when requested by states.
- * Users can access data from their office sites, SO, DO and other agencies offices (USGS, MMS, USFS, etc.).
- * Service Center to insure compatible Bureauwide system capabilities regardless of hardware configuration variation.
- * Service Center develops and enhances system and provides implementation support for this Bureau system.
- * States convert the manual records data to automated format through BLM or contract personnel. The magnitude of this task may indicate contracting.
- * The Service Center provides technical assistance to States in preparing contract language for data conversion.
- * LSCPAC coordinates interagency contacts and participation.

IV. PRODUCTS

- * Up-to-date records data can be retrieved and displayed^y at any site with the proper equipment; this ranges from a video formatted screen display to a graphics terminal display of a map or plat.
- * Many reports with a standard format can be retrieved upon request.

Indexes; Serial Number, Location, Proprietor's Name

Case Counts by case type, pending action, agency/organization where case is pending, etc. by an administrative area (States, District) or political area (State, County, etc.).

Progress Reports: Counts of Action by case type by administrative/political area.

Data Summaries: Acreage leased, patented, sold withdrawn, surveyed, by survey type, etc.

- * Lists detailing all of the data for an area, stipulation used, mailing list by case type, lists of commodities active in an area, etc.
- * Legal acreage and computed map acre comparison reports for data edit purposes.
- * Summaries of status data and areas for Public Land Statistics reports itemized and or totaled by time period(s) and administrative area.

Acres segregated from mineral location in year Y in District X.

Dollar revenue from land sales in state X for year Y.

Unearned Fund Balance for Oil and Gas applications in administrative state X with subtotals by geographic state and 90 day aging increments.

Legal acre summaries by Administrative/Political Area, type of survey, size of parcel, etc.

Backlog summary report by reason, time and party holding case.

- * Master Title Plats plotted on mylar, or paper for a township or other area (section, group of sections, group of townships, etc.).
- * Title and Use Plat displays on a graphics computer terminal with user control on case types displayed (all or a selected subset of cases). Provide interactive on-line retrieval and display with user control of scale, line type, shading and data labeling (annotation).
- * Paper copies of graphic terminal screen displays.
- * Status report. Provide an analyses of prior status on areas in a case being processed (adjudicated) and whether the parcel(s) in the application are or are not available to the applicant. Used as an adjudication aid by BLM personnel.
- * Authorization or Title Transfer documents drawn for review by an adjudicator, and possibly final signature where the Status Report permits.
- * Automated transfers of some data entries such as entries to a simultaneous oil and gas list.
- * Accounting data transfer from cashiers recording on a case to the Bureau's accounting system.
- * Receipt and Declining Deposit Account posting and output document.
- * Query reports produced in either on-line interactive or batch processing mode depending upon length and complexity. Such reports would allow the user requesting the report to vary the retrieval and inclusion of the data more than in a standard fixed format and content report.
- * Future workload reports. Reports summarizing pending actions requiring Bureau work may be produced by area and future time periods. Action due by office or agency such as, payments due, lease expiration and other work planning reports can be generated.
- * Letters to the applicant, in draft or final form to accelerate notification, requests for information, etc.-
- * Case Abstracts for use by an adjudicator or the applicant, available now for interactive retrieval and output.
- * Serial Register Pages itemizing case processing status and case data.

V. SCHEDULE OF EVENTS, MILESTONES, AND DATES

Major milestones listed here. See Tables 1 and 2 for more complete listing and graphic displays.

- 6/82 Implementation of automated lands and minerals case record system - Oil and Gas cases and all new applications received are being entered.
- 1/83 Data Requirements Definition Completed (Part of DRD).
- 2/83 Initiation of land description data and status data conversion.
- 3/83 Completion of descriptions for case recordation/reporting.
- 9/83 Completion of enhancements to case recordation system: Oil and Gas and other case data entry in lower 48 - Terminals in all districts, entry and retrieval capability in every district.
- 10/83 Data conversion (manual to automated) completed for first 4720 townships, operation, and maintenance initiated.
- 9/84 Design completion of Coordinates/Plat Graphics System.
- 10/84 Complete data conversion 12,461 townships.
- 4/85 System developed, tested, and coordinate conversion started on 3239 townships.

Table 1

MILESTONES FOR SCHEDULE OF ACTIVITIES

Activity	FY 33	FY 34	FY 35	After FY 35
I. Case Recordation/Reporting (Enhancements)				
1. Detailed Requirements	—^			
2. System Design	—^			
3. System Development	—^			
4. Test & Integration	—^			
5. Implementation	—^			
6. Operation & Maintenance	—^			
II. Land Description/Status Data				
1. Detailed Requirements	.1 .2 .3 ^			
2. System Design	.1 .2 ^			
3. System Development	.1 .2 ^			
4. Test & Integration	.1 .2 ^			
5. Implementation	.1 .2 .3 .4 ^			
6. Operation & Maintenance				
III. Coordinates Plat Graphics				
1. Detailed Requirements	.1 .2 ^			
2. System Design				
3. System Development		.1 .2 ^		
4. Test & Integration			.1 .2 ^	
5. Implementation				.1 .2 ^
6. Operation & Maintenance				

^ Milestone event, See also Table 2, Summary Schedule of Activities

Table 2

SUMMARY SCHEDULE OF ACTIVITIES

Number	Description of Task	Estimated Start Date	Estimated Completion Date
I	Case Recordation/Reporting (Enhancements)		
I.1	Detailed Requirements Defined	FY 1982	¹⁰ 1/1983
I.2	System Design	FY 1982	² 3/1983
I.3	System Development	FY 1982	³ 5/1983
I.4	Test and Integration	FY 1982	7/1983
I.5	Implementation	FY 1982	⁸ 12/1983
I.6	Operation and Maintenance (Estimate 60,000 cases FY 1982 to 210,000 cases FY 1983 and 250,000 cases by end of FY 84.)	FY 1982	After 1985

Table 2 (Cont.)

Number	Description of Task and Milestones	Estimated Start Date	Estimated Completion Date
II	Land Description/Status Data		
II.1	Detailed Requirements Definition		
II.1.1	Data Requirement Defined	10/1982	1/1983
II.1.2	Define Processing Requirements	1/1983	6/1983
II.1.3	Define Adjudication Outputs/ Processing	1/1983	1/1984
II.2	System Design		
II.2.1	Design Adjudication Aids	1/1983	7/1983
II.2.2	Design Adjudication Process	7/1983	1/1984
II.3	System Development		
II.3.1	Development for Adjudication Aids	4/1983	1/1984
II.3.2	Development for Adjudication Process	1/1984	7/1984
II.4	Test and Integration		
II.4.1	Test Adjudication Aids	4/1984	7/1984
II.4.2	Test Adjudication Process	6/1984	7/1984
II.5	Implementation		
II.5.1	Data Conversion - 4720 Twps	2/1983	10/1983
II.5.2	Data Conversion 12,461 Twps	10/1983	9/1984
II.5.3	Data Conversion - 25,442 Twps	9/1984	Forward
II.6	Operation and Maintenance	8/1984	Forward

Table 2 (Cont.)

Number	Description of Task	Estimated Start Date _ _ _	Estimated Completion Date
III	Coordinates/Plat Graphics		
III.1	Detailed Requirements Definition		
III.1.1	Data Requirements Definition	10/1982	1/1983
III.1.2	Define Outputs and Processing Requirement	1/1983	10/1983
III.2	System Design	11/1983	9/1984
III.3	System Development		
III.3.1	Adjud Process with Criteria Initial Graph	4/1984	4/1985
III.3.2	Additional Decision Critical for Adjudication - Graphics Enhancement	4/1985	6/1986
III.3.3	Coordinate Point Locations	10/1984	6/1982
III.4	Test and Integration	3/1985	7/1985
III.5	Implementation		
III.5.1	Start Coordinate Conversion 3239 Twps	4/1985	After 1985
III.5.2	Completion 3239 Twp - Complete Bal. of 45,862 Twp	4/1985	Forward
III.6	Operation and Maintenance	8/1985	Forward

VI. RESOURCE NEEDS

- * A Cost Summary for development, equipment and data conversion is shown by Fiscal Year in Table 3.
- * Data conversion, abstracting key entry editing and verification will be the major cost. Nearly \$25 million of the \$41 million total is for data-conversion..
- * Equipment costs are approximately \$14 million.
- * Development workmonths (661) and cost are under \$2 million.
- * Average time and cost per township by activity are itemized in Table 4. Costs are also isolated by data type and a potential BLM and contractor separation. Land description costs \$64/Township, status \$182/Township, a total of \$246/Township.
- * Geographic positions (coordinates) are estimated to cost \$250 per Township. This data is used to do adjudication processing and graphic displays of plats.
- * Costs per township in Table 4, are for Western states. Adjustments for Eastern states, where costs will be higher due to records limitations and non public land survey areas, are shown in Table 5. The national average cost is increased to \$286 per township by the higher costs in the case. Including coordinate data, the cost is \$536 per township.
- * Equipment needs and costs to provide for the entry, processing and output of geographic coordinate data, graphics are shown in Table 6.
- * Data conversion phases and volumes are shown by fiscal year and the cumulative data base in Table 7.
- * Cost Estimates for any BLM administrative state may be computed using per township costs in Table 5, by the number of townships in Table 8.

Table 3

DEVELOPMENT & IMPLEMENTATION
OF THE
AUTOMATED LAND & MINERALS MGMT.
SYSTEM
(ALL COSTS IN THOUSANDS OF DOLLARS)

FY	83	84	85	After 85	Total
*Development					
-Workmonths	190	190	190	91	661
-Dollars	\$ 570	\$ 570	\$ 570	\$ 273	\$ 1,983
*Equipment					
-Land Description/Status	650	2,436	300	846	4,232
-Coordinates/Plats	0	0	2,964	7,182	10,146
Total	650	2,436	3,264	8,028	14,378
*Data Conversion ^{1/}					
-Land Description/Status	1,350	3,564	926	7,343	13,183
-Coordinates/Plats	0	0	810	10,656	11,466
Total	1,350	3,564	1,736	17,999	24,649
Equipment & Data Conversion Total	2,000	6,000	5,000	26,027	39,027
Total	\$ 2,570	\$ 6,570	\$ 5,570	\$ 26,300	\$ 41,010

^{1/} Data Conversion Costs for O&G Cases and Cases Received in SO's after 6/82 are not included in this Table.

bie 4

TIME AND COST FOR AUTOMATION OF LAND DESCRIPTION

ADMIN/POLITICAL AREA AND CURRENT LAND STATUS FOR ONE TOWNSHIP

Activity		Minutes Per Township	Land Des- cription	Land Status	Total	WM Per Twp 2/	% by Activ- ity	Average Cost per Township 3/
M 1/	Contract Administration	18		36	54	.0051923	6.3381	\$ 15.58
	Edits, Inspection	36		38	74	.0071154	8.6854	12.35
	Data Verification	18		30	48	.0046154	5.6338	13.85
		<u>72</u>		<u>104</u>	<u>176</u>	<u>.0169231</u>	<u>20.6573</u>	<u>50.78</u>
nt- ctor	Source Data Prep	9		12	21	.0020192	2.4648	6.05
	Abstract Data	105		366	471	.0452885	55.2817	135.86
	Key Enter Data	36		148	184	.0176923	21.5962	53.08
		<u>150</u>		<u>526</u>	<u>676</u>	<u>.0650000</u>	<u>79.3427</u>	<u>194.99</u>
Totals		222		630	852	.0819231	100.0000	\$245.77
Cost by Data Type		26.06		73.94	100.00			
Cost by Data Type		64.04		181.73	245.77			

Percent Distribution in 7/6/82 paper SC 15.02, SO 5.64, Contactor 79.34

23/82 Recommendation: State Contract Administration; SO 19%, SC 2%, Contactor 79%

Conversions (52 wk/yr) (40 hr/wk) = 2080 hr/yr = 173.3 hr/mo = 21.66 da/mo

BLM WM Costs: 4210 \$2,100, 4111 \$3,700 Assume \$3,000/WM
Contractor - Labor \$120/da \$2,604
Space Utilities & Equipment and Processing

120 Sq.Ft.x\$10/Sq.Ft.+ 12 = 100+20+16 = 136

Profit and Risk, 10 Percent of Labor 260

Contractor Total \$3,000/WM
Labor Cost \$3,000 per workmonth for BLM and Contractor, FY 82 base

Table 5

AVERAGE TOWNSHIP AND TOTAL COSTS FOR DATA CONVERSION FROM MANUAL TO AUTOMATED FORMAT 1/

Area	Number of Townships	Land Description S/TWP	Land Status S/TWP	Description and Status S/TWP	Geographic Position Data for Graphics S/TWP	Total \$TWP
Western States	38,790	\$64.04	\$181.73	246	250	496
Eastern States 2/						
Public Land Survey	6,419	128	364	492	250	742
Non Public Land Survey	653	256	728	984	250	1,234
National Av.				286	250	536
Extended Total	45,869 TWP			13,134,000	11,466,000	24,600,000
O&G & other cases	250,000 cases			1,467,000		
Total				14,601,000	11,466,000	26,067,000

1/ Township cost estimate by type of data and inhouse/contractor distribution. Use with Townships in Table 8 to make state cost and work force estimates.

Activity	SO	SC	Contractor	Total
Case Recordation -- O&G and other, \$1,467,000/45,869 TWPS	32	-	-	32
Land Description and Status	54	6	226	286
Geographic Coordinates and Plat Graphics	47	5	198	250
	\$133	\$11	\$424	\$568

2/ Double workmonths and costs in Public Land Survey Areas of Eastern States since Master Title Plats and Historical Indexes are not available. Quadruple workmonths and costs in non public land survey areas (colonial states and Texas) due to additional work required in legal description and record searches.

Table 6 EQUIPMENT NEEDED FOR THE ENTRY, PROCESSING AND OUTPUT OF GEOGRAPHIC DATA
(Costs in \$1,000's)

Graphics Stations	Input/Output at State Office, SC			Input/Output at District Offices		
	Cost/Unit	Number	Extended Cost	Cost/Unit	Number	Extended Cost
Graphics Terminal with some independent processing capability	\$50	2/SO, 3/SC Have 25 Need 13 12	\$600	\$50	53	\$2,650
Screen Copier	7	25 Have 13 Need 12	84	7	53	371
Digitizer Tablet Input/Update	10	25 Have 7 Need 18	120	-	1/	-
Communications Modems @ \$3,000/Stat.	6	Hardwire 25 0	0	6	53pairs	318
Subtotal	\$73	25	\$864 new funds	63	53	3,339
Computer Processor Storage	\$250	11/SO 11 1/SC 1 12 Have 6 Need 6	\$1,500	-	2/	-
Plotter	\$60	11/SO 11 1/SC 1 Need 10	600	-	2/	-
Total SO			\$2,964			
Total DO						\$3,339
Total 3/				\$2,964		

- / Input Digitizer Tablet \$3,000 to \$15,000 per Unit depending on production and accuracy requirements.
- / Major coordinate processors and plotters in State offices
- / Additional Stations for States: Public Room, Records Adjudication (34 in SO's) and Resource Area Headquarters Offices (70) @ \$63, may be acquired as data use level requires, Total additional \$3,843.

Table 7

DATA CONVERSION - MANUAL TO AUTOMATED FORMAT

Fiscal Year Phases		'83	'84	'85	After '85	Total
I	Oil & Gas & other cases received SO's after 6/1/82 (or parts of 31,389 TWPS)	150,000	40,000 by Dec. 83			250,000 <u>1/</u>
II	Land description and status data conversion					
	TWP Initiated	4,720	12,461	3,239	25,442	45,862
	TWP Completed	0+	4,720	12,461	28,681	45,862
III	Coordinates Plats					
	TWP Initiated	0	0	3,239	42,623	45,862
	TWP Completed	0	0	0+	45,862	45,862
Cumulative Data Automation						
I	Case Data O&G and other (on parts of 31,389 TWP) No. of cases	210,000	250,000	<u>2/</u>	<u>2/</u>	<u>2/</u>
II	Land description and status data					
	No. of Townships	0+	4,720	17,181	45,862	45,862
III	Coordinates/plat for points on perimeter of land description areas.					
	No. of Townships	0	0	0	45,862	45,862

1/ Included 60,000 cases automated by Phase I in FY 1982

2/ Data for Phase I cases combined with Phase II Status Data as Townships are automated

Table 8 VARIOUS AREAS IN TOWNSHIPS, FOR USE IN ESTIMATING COST
AND WORK FORCE REQUIREMENTS FOR BLM ADMINISTRATIVE STATES

STATE	FEDERAL INTEREST TOWNSHIPS	OIL & GAS TOWNSHIPS	TOTAL TOWNSHIPS
Arizona	3472	2100	3472
California	4836	1500	4836
Colorado	3177	2000	3177
Idaho	2546	900	2546
Montana	6500	4789	8986
Nevada	3369	2500	3369
New Mexico	4176	3000	6239 ^{1/}
Oregon	4411	2000	5034
Utah	2589	2100	2589
Wyoming	<u>3714</u>	<u>3000</u>	<u>7845</u>
Sub Total	38,790	23,889	48,093
Eastern SO	<u>7,072</u>	<u>4,615^{4/}</u>	<u>21,792^{2/}</u>
Total	45,862	28,504 ^{4/}	69,885 ^{3/}
	65%	45%	100%

1/ Excludes 7,864 Non-Public Land Survey Equivalent Townships in Texas

2/ Excludes 14,962 Non-Public Land Survey Township Equivalents in Eastern States

3/ Total Townships and Township Equivalents in "Lower 48", 92,717

4/ Number of Oil and Gas Townships revised from May 1982 figure (of 7,500 ES and 31,389 Total) after new township count in Eastern States.

VII. MAJOR ISSUES

- * Finding qualified contractors
- * Maintaining satisfactory quality of automated data during conversion from manual records.
- * Insuring uniform administration of contracts.
- * Maintaining adequate state personnel for timely inspection of contract products.
- * Additional workload during implementation stage while parallel operation of manual and automated systems.
- * Availability and use of BLM personnel to do the above given present and future Table of Organization versus use of contracting.
- * Prioritizing and allocating available data conversion funding to administrative states.

AUTOMATED LAND AND MINERALS SYSTEM

Output Samples

<u>Title</u>	<u>Page</u>
Arizona Serial Number Case Abstracts	
AZ A 1 - Application Received	1
AZ A 2 - Lease Effective	2
AZ A 3 - Partial Assignment of Interest	3
AZ A 4 - Assignment of Interest	4
AZ A 5 - Senior File Partial Assignment	5
AZ A 5A- Junior File Partial Assignment	6
Colorado Serial Number CO C 31764	
Application received, rejected in part, stipulations, refund, lease effective and case inactive	7
Receipt printed on printer terminal	8
Case abstract printed on printer terminal	9
Colorado Serial Number CO C 15871	
Application received, rental advance, stipulations, rejected, closed and refund	10
Receipt	11
Case Abstract	12
Montana Serial Number MT M 53145	
Application received, rejected, appeal and case to IBLA	13
Case abstract —	14
Montana Serial Number MT M 55857	
Application received Mineral Survey	15
Case abstract	16
Montana Serial Number MT M 52524	
Application, withdrawn in part	17
Case abstract	18
Montana Serial Number MT M 55253	
Application received, simo noted, exclusion noted on aliquot description	19
Case abstract	20
Output reports are initiated by the user and directed to be printed at the State Office Level 6.	
Location Index (Daily)	21-22
Master file serial number index	23-24
Master file location index	25-26
Master file proprietor index	27-28

STATE: ARIZONA

CASE ABSTRACT

CASE TYPE 311111 O&G LSE NONCOMP PUB LAND
LEGAL REF ACT 2-25-1920 30USC181

SERIAL NUMBER AZA

1

NAME AND MAILING ADDRESS

SMITH PETER M

5311 JELLISON

ARVADA

CO 80002

APPLICANT

.00000 %

DESCRIPTION OF LAND

T. 1 N, R. 1 E, GILA-SALT R. MERIDIAN

SEC

COUNTY

BLM DIST.

SURFACE MGT AGENCY

1, ALL;

MARICOPA

PHOENIX

12, E2, NWNW;

1NOTICE & INFRONT OF TIME THE ASKERISK
2WILL NOT PRINT. THIS IS ORIGINAL CASE
3THER ARE MORE THAN THE 5 PAGES THAT WE
4FIRST TALKED ABOUT. THE S/N IS REALY
5THE PAGE NO. IN THIS SEQUENCE EXCEPT
6FOR THE LAST PAGE WHICH HAS THE CORRECT
7SUFFIX 'A'.

*** TOTAL ACREAGE 640.000 ***

ACTION DATE	CODE	ACTION TAKEN	ACTION REMARKS	PENDING ACTION
6/05/1981	124	APPLICATION RECEIVED	#1020;	AZ94344

STATE: ARIZONA

CASE ABSTRACT

CASE TYPE 311111 O&G LSE NONCOMP PUB LAND
LEGAL REF ACT 2-25-1920 30USC181

SERIAL NUMBER AZA

2

NAME AND MAILING ADDRESS

SMITH PETER M
5311 JELLISON
ARVADA
LESSEE

CO 80002

100.00000 %

DESCRIPTION OF LAND

1 N, R. 1 E, GILA-SALT R. MERIDIAN

SEC

COUNTY
MARICOPABLM DIST.
PHOENIX

SURFACE MGT AGENCY

1, ALL;
12, E2, NWNW;1 THIS IS HOW THE FILE WILL LOOK AFTER THE
2 LEASE ISSUES - MORE OR LESS.

*** TOTAL ACREAGE 640.000 ***

ACTION DATE	CODE	ACTION TAKEN	ACTION REMARKS	PENDING ACTION
6/05/1981	124	APPLICATION RECEIVED	#1020;	AZ94344
6/12/1981	868	LEASE EFFECTIVE		
6/13/1981	703	CASE INACTIVE		

ATE: ARIZONA

CASE ABSTRACT

SE TYPE 311111 O&G LSE NONCOMP PUB LAND SERIAL NUMBER AZA 3
GAL REF ACT 2-25-1920.30USC181

NAME AND MAILING ADDRESS

SMITH PETER M PETERSON BOB
5311 JELLISON 1ST DENVER PLAZA 600
ARVADA CO 80002 DENVER CO 80002
ASSIGNOR 50.00000 % ASSIGNEE 50.00000 %

DESCRIPTION OF LAND

1 N, R. 1 E, GILA-SALT R. MERIDIAN

SEC : COUNTY BLM DIST. SURFACE MGT AGENCY
1, ALL; MARICOPA PHOENIX
12, E2, NWNW;

1 NOTICE ADVANCE DATE OF 703 TO MAKE IT
2 FALL IN SEQUENCE
3 THIS IS THE WAY A PARTIAL ASSIGNMENT
4 OF INTEREST WILL LOOK.

** TOTAL ACREAGE 640.000 **

ION DATE	CODE	ACTION TAKEN	ACTION REMARKS	PENDING ACTION
6/05/1981	124	APPLICATION RECEIVED	#1020;	AZ94344
6/12/1981	868	LEASE EFFECTIVE		
6/13/1981	703	CASE INACTIVE		
1/15/1982	709	PARTIAL ASGN FILED		AZ94344
2/01/1982	139	ASSIGNMNT APPRVD		
2/02/1982	703	CASE INACTIVE		

STATE: ARIZONA

CASE ABSTRACT

CASE TYPE 311111 O&G LSE NONCOMP PUB LAND SERIAL NUMBER AZA 4
LEGAL REF ACT 2-25-1920 30USC181

NAME AND MAILING ADDRESS

PETERSON BOB
1ST DENVER PLAZA 600
DENVER CO 80002
ASSIGNEE 100.00000 %

DESCRIPTION OF LAND

T. 1 N, R. 1 E, GILA-SALT R. MERIDIAN

SEC	COUNTY	BLM DIST.	SURFACE MGT AGENCY
1, ALL;	MARICOPA	PHOENIX	
12, E2, NWNW;			

1THIS IS WHAT TOTAL ASSIGNMENT OF INTER-
2EST WILL LOOK LIKE (USE THE FIRST CASE
3AS A BASIS TO COMPARE WITH)

*** TOTAL ACREAGE 640.000 ***

ION DATE	CODE	ACTION TAKEN	ACTION REMARKS	PENDING ACTION
6/05/1981	124	APPLICATION RECEIVED	#1020;	AZ94344
6/12/1981	868	LEASE EFFECTIVE		
6/13/1981	703	CASE INACTIVE		
1/15/1982	140	ASSIGNMENT FILED		
2/01/1982	139	ASSIGNMENT APPROVD	SMITH PETER H	
2/02/1982	703	CASE INACTIVE		

STATE: ARIZONA

CASE ABSTRACT

LE TYPE 311111 O&G LSE NONCOMP PUB LAND SERIAL NUMBER AZA 5
LEGAL REF ACT 2-25-1920 30USC181

NAME AND MAILING ADDRESS

SMITH PETER H
5311 JELLISON
ARVADA CO 80002
ASSIGNOR 100.00000 %

DESCRIPTION OF LAND

1 N, R. 1 E, GILA-SALT R. MERIDIAN

SEC	COUNTY	BLM DIST.	SURFACE MGT AGENCY
12, E2, NWNW;	MARICOPA	PHOENIX	

LANDS RELINQUISHED, WITHDRAWN, REJECTED OR ASSIGNED FROM TOWNSHIP
701, ALL;1 THIS IS HOW THE SENIOR FILE WILL LOOK
2 ON COMPLETION OF A PARTIAL ASSIGNMENT3
4 IF YOU REJECT-RELINQUISH-ASSIGN-
5 WITHDRAW-- PUT A 7 (SEVEN) IN FRONT OF
6 SECTION NUMBER AND ENTER THE 700 NUMBER
7 IN ACTION REMARKS AFTER THE APPROPRIATE
8 ACTION CODE.

*** TOTAL ACREAGE 640.000 ***

ACTION DATE	CODE	ACTION TAKEN	ACTION REMARKS	PENDING ACTION
6/05/1981	124	APPLICATION RECEIVED	#1020;	AZ94344
6/12/1981	868	LEASE EFFECTIVE		
6/13/1981	703	CASE INACTIVE		
1/15/1982	709	PARTIAL ASGN FILED		AZ94344
2/01/1982	139	ASSIGNMENT APPROVD	AZA 5 A 701	
2/02/1982	703	CASE INACTIVE		

STATE: ARIZONA

CASE ABSTRACT

TYPE 311111 O&G LSE NONCOMP PUB LAND
LEGAL REF ACT 2-25-1920 30USC181

SERIAL NUMBER AZA

SA

NAME AND MAILING ADDRESS

PETERSON BOB
1ST DENVER PLAZA 600__
DENVER CO 80002
ASSIGNEE 100.00000 %

DESCRIPTION OF LAND

T. 1 N, R. 1 E, GILA-SALT R. MERIDIAN

SEC 1, ALL; COUNTY MARICOPA BLM DIST. PHOENIX SURFACE MGT AGENCY

1THIS IS HOW THE JUNIOR FILE WILL LOOK
2ON COMPLETION OF A PARTIAL ASSIGNMENT
3IT HAS BEEN A PLEASURE DOING BUSINESS
4WITH YOU.

*** TOTAL ACREAGE 640.000 ***

ION DATE	CODE	ACTION TAKEN	ACTION REMARKS	PEND -> ACTION
6/05/1981	124	APPLICATION RECEIVED	#1020;	AZ94344
6/12/1981	868	LEASE EFFECTIVE		
6/13/1981	703	CASE INACTIVE		
1/15/1982	709	PARTIAL ASGN FILED		AZ94344
2/01/1982	139	ASSIGNMENT APPRVD	AZA 5	
2/02/1982	703	CASE INACTIVE		

Legal Reference ACT 2-25-1920 30USC181	Case Type	Serial Number
Geographic/Claim Name C3G LSE NONCOMP PUB LAND	311111	COC 31764

COMMODITY- OIL & GAS
NAME AND ADDRESS
CROFF OIL CO
LESSEE

1600 BROADWAY #530 DENVER CO 80202
PCT= 100.00000

PAGE: 1
AS OF: 7/23/1982

DESCRIPTION OF LAND

6TH PM -- MERIDIAN
T. 9 S. R. 68 W.

DISTRICT= CANON CITY
SEC. 8- W2NW, SW;
SEC. 17- W2, W2SE;
SEC. 21- SWNW, S2SW;
SEC. 27- SW;
SEC. 34- W2E2, W2;

COUNTY
DOUGLAS

STATE
CO

AGENCY= FOREST SERVICE

LANDS RELINQUISHED, WITHDRAWN, REJECTED OR ASSIGNED FROM TOWNSHIP-
SEC. 21- NWNW;

1,400.000 ACRES

ACTIONS

DATE	CODE	TAKEN	REMARKS
6/08/1981	124	APPLICATION RECEIVED	
	***	PENDING ACTION= BR OF LANDS & MINERALS OPERATI	
6/23/1982	126	APPL REJECTED IN PART	
	***	PENDING ACTION= CORPORATIONS	
6/23/1982	476	STIP CONSENT REQD	
	***	PENDING ACTION= CORPORATIONS	
6/29/1982	477	STIP CONSENT REC'D	
	***	PENDING ACTION= BR OF LANDS & MINERALS OPERATI	
7/19/1982	379	REFUND AUTHORIZED	ACREAGE ADJUSTED
8/01/1982	868	LEASE EFFECTIVE	

- 7 -

US DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

DATE: 7/26/82

(RECEIPT AND ACCOUNTING ADVICE)

SERIAL NUMBER
COC 31764

SUBJECT: O&G LSE NONCOMP PUB LAND

CROFF OIL CO
1600 BROADWAY #530
DENVER CO
80202
LESSEE

RECEIPT NO. 152562

AMOUNT RECEIVED		\$1,450.00
METH.	CODE	
2	01	\$10.00
2	07	\$1,440.00

STATE: COLORADO

CASE ABSTRACT

TYPE 311111 O&G LSE NONCOMP PUB LAND SERIAL NUMBER COC 31764
LOCAL REF ACT 2-25-1920 30USC191

NAME AND MAILING ADDRESS

CROFF OIL CO
1600 BROADWAY #530
DENVER CO 80202
LESSEE 100.00000 %

DESCRIPTION OF LAND

9 S, R. 68 W, 6TH PM MERIDIAN
SEC COUNTY BLM DIST. SURFACE MGT AGENCY
8, W2NW, SW; DOUGLAS CANON CITY FOREST SERVICE
17, W2, W2SE;
21, SWNW, S2SW;
27, SW;
34, W2E2, W2;

LANDS RELINQUISHED, WITHDRAWN, REJECTED OR ASSIGNED FROM TOWNSHIP
721, NWNW;

TOTAL ACREAGE 1,400.000 ***

ACTION DATE	CODE	ACTION TAKEN	ACTION	REMARKS	PENDING ACTION
6/08/1981	124	APPLICATION RECEIVED			C094313
6/23/1982	126	APPL REJECTED IN PART	721		6020
6/23/1982	476	STIP CONSENT REQD			6020
6/29/1982	477	STIP CONSENT REQD			C094313
7/19/1982	379	REFUND AUTHORIZED		ACREAGE ADJUSTED	
8/01/1982	868	LEASE EFFECTIVE			
8/02/1982	703	CASE INACTIVE			

Legal Reference ACT 2-25-1920 30USC181		Case Type	Serial Number
Geographic/Claim Name O&G LSE NONCOMP PUB LAND		311111	COC 15871

COMMODITY- OIL & GAS

PAGE: 1
AS OF: 7/23/1982

NAME AND ADDRESS
SPRINKLE JOSEPH S BOX 991 SOCORRO NM 87801
APPLICANT PCT= 100.00000

DESCRIPTION OF LAND

T. 2 N. R. 88 W. 6TH PM MERIDIAN

DISTRICT= CRAIG AGENCY= FOREST SERVICE
SEC. 6- ALL; PROTRA DIAGRAM #3 RIO BLANCO CO
SEC. 7- ALL; PROTRA DIAGRAM #3
SEC. 18- ALL; PROTRA DIAGRAM #3

T. 3 N. R. 89 W.

DISTRICT= CRAIG
SEC. 35- ALL; RIO BLANCO CO
SEC. 36- ALL;

2,437.000 ACRES

ACTIONS DATE	CODE	TAKEN	REMARKS
3/09/1972	124	APPLICATION RECEIVED	
	***	PENDING ACTION= BR OF LANDS & MINERALS OPERATI	
4/12/1982	112	RENTAL ADVANCE REQUIRED	
	***	PENDING ACTION= INDIVIDUAL	
4/12/1982	476	STIP CONSENT REQD	
	***	PENDING ACTION= INDIVIDUAL	
6/23/1982	125	APPLICATION REJ/DEN	
6/23/1982	146	CASE CLOSED	
6/23/1982	379	REFUND AUTHORIZED	

- 10 -

US DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

DATE: 7-26-80

(RECEIPT AND ACCOUNTING ADVICE)

SERIAL NUMBER
COC 15871

SUBJECT: O&G LSE NONCOMP PUB LAND

SPRINKLE JOSEPH S
BOX 991
SOCORRO
87801
APPLICANT

NM

RECEIPT NO. 331502

AMOUNT RECEIVED

\$1,228.50

METH. CODE

2 01 \$10.00

2 07 \$1,218.50

STATE: COLORADO

CASE ABSTRACT

E TYPE 311111 O&G LSE NONCOMP PUB LAND
LEGAL REF ACT 2-25-1920 30USC191

SERIAL NUMBER COO

15871

NAME AND MAILING ADDRESS

SPRINKLE JOSEPH S

BOX 991

SOCORRO

NM 87301

APPLICANT

100.00000 %

DESCRIPTION OF LAND

T. 2 N, R. 88 W, 6TH PM MERIDIAN

SEC

COUNTY

BLM DIST.

SURFACE MGT AGENCY

LANDS RELINQUISHED, WITHDRAWN, REJECTED OR ASSIGNED FROM TOWNSHIP
 706, ALL; PROTRA DIAGRAM #3 RIO BLANCO CRAIG FOREST SERVICE
 707, ALL; PROTRA DIAGRAM #3
 718, ALL; PROTRA DIAGRAM #3

T. 3 N, R. 89 W, 6TH PM MERIDIAN

LANDS RELINQUISHED, WITHDRAWN, REJECTED OR ASSIGNED FROM TOWNSHIP
 735, ALL; RIO BLANCO CRAIG
 736, ALL;

*** TOTAL ACREAGE 2,437.000 ***

ACTION DATE	CODE	ACTION TAKEN	ACTION REMARKS	PENDING ACTION
3/09/1972	124	APPLICATION RECEIVED		CO94313
4/12/1982	112	RENTAL ADVANCE REQUIRED		6010
4/12/1982	476	STIP CONSENT REQD		6010
6/23/1982	125	APPLICATION REJ/DEN	ALL	
6/23/1982	146	CASE CLOSED		
6/23/1982	187	DEC FINAL NO APPEAL		
6/23/1982	379	REFUND AUTHORIZED		

Legal Reference ACT 2-25-1920 30USC181	Case Type	Serial Number
Geographic Claim Name 083 LSE NONCOMP PUB LAND	311111	MTM 53145

COMMODITY- OIL & GAS

PAGE: 1
AS OF: 7/23/1982

NAME AND ADDRESS

PRINGLE CHESTER L BOX 848
APPLICANT

MARBLE FALLS TX 78654
PCT= 100.00000

DESCRIPTION OF LAND

T. 21 N. R. 8 W. PRINCIPAL MT MERIDIAN

DISTRICT= BUTTE

COUNTY STATE

SEC. 1- E2W2;
SEC. 2- E2SE;
SEC. 11- E2NE;
SEC. 15- NENE;
SEC. 18- W2, SE, SENE;
SEC. 19- ALL;
SEC. 20- W2, SE;
SEC. 29- W2W2, E2SW, SENW;
SEC. 30- ALL;

LEWIS AND CL MT

2,920.000 ACRES

ACTIONS

DATE	CODE	TAKEN	REMARKS
9/28/1981	124	APPLICATION RECEIVED	#0300;
5/10/1982	125	APPLICATION REJ/DEN	
5/28/1982	120	APPEAL FILED	
5/02/1982	165	CASE SENT TO IBLA	

STATE: MONTANA

CASE ABSTRACT

TYPE 311111 D&G LSE NONCOMP PUB LAND SERIAL NUMBER MTH 53145
LEGAL REF ACT 2-25-1920 30USC191

NAME AND MAILING ADDRESS

FRINGLE CHESTER L
BOX 848
MARBLE FALLS TX 78654
APPLICANT 100.00000 %

DESCRIPTION OF LAND

T. 21 N, R. 8 W, PRINCIPAL MT MERIDIAN

SEC	COUNTY	BLM DIST.	SURFACE MGT AGENCY
1, E2W2;	LEWIS AND CLARUTTE		
2, E2SE;			
11, E2NE;			
15, NENE;			
18, W2-SE, SENE;			
19, ALL;			
20, W2-SE;			
29, W2W2, E2SW, SENW;			
30, ALL;			

TOTAL ACREAGE 2,920.000 ***

ACTION DATE	CODE	ACTION TAKEN	ACTION REMARKS	PENDING ACTION
9/28/1981	124	APPLICATION RECEIVED	#0800;	
5/10/1982	125	APPLICATION REJ/DEN		
5/26/1982	120	APPEAL FILED		
6/02/1982	165	CASE SENT TO IBLA		

Legal Reference ACT MAY 10 1872 30 USC 28		Case Type	Serial Number
Geographic/Claim Name APLN MINERAL SURVEY CODE		386201	MTM 55857

COMMODITY- PLATINUM, PALLADIUM

NAME AND ADDRESS
MANVILLE PROD CORP 2410 PRUDENTIAL PLZ DENVER CO 80265
APPLICANT

PAGE: 1
AS OF: 7/23/1982
PCT= 100.00000

DESCRIPTION OF LAND

PRINCIPAL MT MERIDIAN

T. 4 S. R. 12 E.

DISTRICT= LEWISTOWN
SEC. 24- MS 10967 & 10968

COUNTY STATE
SWEET GRASS MT

T. 4 S. R. 13 E.

DISTRICT= LEWISTOWN
SEC. 19- MS 10967 & 10968
SEC. 20- MS 10967 & 10968
SEC. 27- MS 10967 & 10968
SEC. 28- MS 10967 & 10968
SEC. 29- MS 10967 & 10968
SEC. 30- MS 10967 & 10968
SEC. 33- MS 10967 & 10968
SEC. 34- MS 10967 & 10968
SEC. 35- MS 10967 & 10968

COUNTY STATE
SWEET GRASS MT

661.939 ACRES

ACTIONS

DATE	CODE	TAKEN	REMARKS
7/14/1982	124	APPLICATION RECEIVED	#0153;

STATE: MONTANA

CASE ABSTRACT

E TYPE 386201 APLN MINERAL SURVEY LODE
JAL REF ACT MAY 10 1872 30 USC 28

SERIAL NUMBER MTM

55857

NAME AND MAILING ADDRESS

HANVILLE PROD CORP
2410 PRUDENTIAL PLZ
DENVER CO 80265
APPLICANT

100.00000 %

DESCRIPTION OF LAND

T. 4 S. R. 12 E. PRINCIPAL MT MERIDIAN

SEC	COUNTY	BLM DIST.	SURFACE MGT AGENCY
24, MS 10967 & 10968	SWEET GRASS	LEWISTOWN	

T. 4 S. R. 13 E. PRINCIPAL MT MERIDIAN

19, MS 10967 & 10968	SWEET GRASS	LEWISTOWN
20, MS 10967 & 10968		
27, MS 10967 & 10968		
28, MS 10967 & 10968		
29, MS 10967 & 10968		
30, MS 10967 & 10968		
33, MS 10967 & 10968		
34, MS 10967 & 10968		
35, MS 10967 & 10968		

*** TOTAL ACREAGE 661.939 ***

ACTION DATE	CODE	ACTION TAKEN	ACTION REMARKS	PENDING ACTION
7/14/1982	124	APPLICATION RECEIVED	#0158;	

Legal Reference ACT 8-07-1947 3DUSC351-359		Case Type	Serial Number
Geographic Claim Name O&G LSE NONCOMP ADG LAND		311112	MTM 52524

COMMODITY- OIL & GAS

PAGE: 1
AS OF: 7/23/1982

NAME AND ADDRESS
DEVER EXPL INC 30X 2940 CASPER WY 82602
APPLICANT PCT= 100.00000

DESCRIPTION OF LAND

T. 9 N. R. 24 E. PRINCIPAL MT MERIDIAN

DISTRICT= LEWISTOWN

SEC. 24- SW;

SEC. 29- SW;

COUNTY STATE
MUSSELSHELL MT

LANDS RELINQUISHED, WITHDRAWN, REJECTED OR ASSIGNED FROM TOWNSHIP-

SEC. 26- LOTS 3;

SEC. 26- W2SW;

SEC. 31- LOTS 1-4;

SEC. 31- E2W2;

SEC. 33- S2;

1,077.910 ACRES

ACTIONS

DATE	CODE	TAKEN	REMARKS
8/03/1981	124	APPLICATION RECEIVED	#0800;
3/16/1982	131	APLN WITHDRAWN IN PRT	

STATE:MONTANA

CASE ABSTRACT

E TYPE 311112 O&G LSE NONCOMP ACQ LAND SERIAL NUMBER MTH 52524
LEGAL REF ACT 8-07-1947 30USC351-359

NAME AND MAILING ADDRESS

DEVER EXPL INC
BOX 2940
CASPER WY 82602
APPLICANT 100.00000 %

DESCRIPTION OF LAND

T. 9 N, R. 24 E, PRINCIPAL MT MERIDIAN

SEC	COUNTY	BLM DIST.	SURFACE MGT AGENCY
24, SW;	MUSSELSHELL	LEWISTOWN	
29, SW;			

LANDS RELINQUISHED, WITHDRAWN, REJECTED OR ASSIGNED FROM TOWNSHIP
726, LOTS 3;
726, W2SW;
731, LOTS 1-4;
731, E2W2;
733, S2;

* TOTAL ACREAGE 1,077.910 ***

ACTION DATE	CODE	ACTION TAKEN	ACTION REMARKS	PENDING ACTION
8/03/1981	124	APPLICATION RECEIVED	#0800;	
3/16/1982	131	APLN WITHDRAWN IN PRT		

Legal Reference ACT 2-25-1920, 37 USC 311 ET SEQ	Case Type	Serial Number
Geographic Description Name O&G LSE SIMO PUBLIC LAND	311211	MTM 55253

COMMODITY- OIL & GAS

PAGE: 1
AS OF: 7/23/1982

NAME AND ADDRESS

VAN DUZER JANE W 12177 WINTON WAY
APPLICANT

LOS ALTOS HILLS CA 94022
PCT= 100.00000

DESCRIPTION OF LAND

T. 32 N. R. 20 E. PRINCIPAL MT MERIDIAN

DISTRICT= LEWISTOWN

COUNTY STATE

SEC. 0- SIMO MT22

BLAINE MT

SEC. 9- SWNW;

SEC. 12- SW, W2SE, SESE;

SEC. 13- SWSE;

SEC. 14- S2SE;

SEC. 15- SWNW;

SEC. 24- SWSE;

T. 32 N. R. 21 E.

DISTRICT= LEWISTOWN

COUNTY STATE

SEC. 7- SWNE, SENW, E2SE;
SENE; EXCL 0.05 AC-RSVR
R/W GF 068705

BLAINE MT

SEC. 8- W2SW, SESW;
SWNW; EXCL 1.64 AC-RSVR
R/W GR 068705

878.310 ACRES

ACTIONS

DATE

CODE

TAKEN

REMARKS

5/21/1982 124 APPLICATION RECEIVED

#0400;

STATE: MONTANA

CASE ABSTRACT

TYPE 311211 O&G LSE SIMO PUBLIC LAND SERIAL NUMBER MTH 55253
LEGAL REF ACT 2-25-1920, 30USC191ETSEQ

NAME AND MAILING ADDRESS

VAN DUZER JANE N
12177 WINTON WAY
LOS ALTOS HILLS CA 94022
APPLICANT

.000000 %

DESCRIPTION OF LAND

T. 32 N, R. 20 E, PRINCIPAL MT MERIDIAN

SEC	COUNTY	BLM DIST.	SURFACE MGT AGENCY
0, SIMO MT22			
9, SUNW;	BLAINE	LEWISTOWN	
12, SW, W2SE, SESE;			
13, SWSE;			
14, S2SE;			
15, SUNW;			
24, SWSE;			

T. 32 N, R. 21 E, PRINCIPAL MT MERIDIAN

7, SWNE, SENW, E2SE;	BLAINE	LEWISTOWN
SENE; EXCL 0.05 AC-RSVR		
R/W-GF 068705		
8, W2SW, SESW;		
SUNW; EXCL 1.64 AC-RSVR		
R/W GR 068705		

*** TOTAL ACREAGE 878.310 ***

ACTION DATE	CODE	ACTION TAKEN	ACTION REMARKS	PENDING ACTION
5/21/1982	124	APPLICATION RECEIVED	#0400;	

DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RUN DATE 7/23/82

STATE COLORADO

D 6TH PM

LOCATION INDEX (DAILY)

ENTRY DATE 7/22/82

-----					-----	
SUBDIVISION					PROPERTY	
					CASE TYPE	DATE FILED
					SERIAL NUMBER	
19 LOTS 1,2; E2,E2W2;					311112	2/07/79 COC
					27737	TEXAS OIL & GAS CO
20 LOTS 1,2; E2,E2W2;					311112	2/07/79 COC
					27737	TEXAS OIL & GAS CO
31 LOTS 1,2; E2,E2W2;					311112	2/07/79 COC
					27737	TEXAS OIL & GAS CO
32 W2,W2E2;					311112	2/07/79 COC
					27737	TEXAS OIL & GAS CO

9 S, R. 68 W

8 W2NW,SW;					311111	6/08/81 COC
					31764	CROFF OIL CO
W2,W2SE;					311111	6/08/81 COC
					31764	CROFF OIL CO
SWNW,S2SW;					311111	6/08/81 COC
					31764	CROFF OIL CO
27 SW;					311111	6/08/81 COC
					31764	CROFF OIL CO
34 W2E2,W2;					311111	6/08/81 COC
					31764	CROFF OIL CO
21 NWNW;					311111	6/08/81 COC
					31764	CROFF OIL CO

8 S, R. 69 W

2 LOTS 7,8,10,12;					311111	6/09/82 COC
					35883	JACOB ARTHUR F
11 LOTS 1-9;					311111	6/09/82 COC
					35883	JACOB ARTHUR F
14 LOTS 1-15;					311111	6/09/82 COC
					35883	JACOB ARTHUR F
23 LOTS 1-16;					311111	6/09/82 COC
					35883	JACOB ARTHUR F
26 LOTS 1-16;					311111	6/09/82 COC
					35883	JACOB ARTHUR F
35 LOTS 1-15;					311111	6/09/82 COC
					35883	JACOB ARTHUR F

PC: 06210P1

DEPARTMENT OF THE INTERIOR

BUREAU OF LAND MANAGEMENT

RUN DATE 7/23/82

STATE COLORADO

FILED 6TH PM

LOCATION INDEX (DAILY)

ENTRY DATE 7/22/82

T. 4 S. R. 84 W

SEC	SUBDIVISION	CASE TYPE	DATE FILED	SERIAL NUMBER	PROPRIETOR
27	S2SW, N2SW, SE2SW	320000	6/25/82	COC 35963	COX STEVEN W
28	SE2SW	320000	6/25/82	COC 35963	COX STEVEN W
33	E2, EXCL 120 AC MS2164	320000	6/25/82	COC 35963	COX STEVEN W
34	W2W2, E2NW	320000	6/25/82	COC 35963	COX STEVEN W

T. 6 S. R. 83 W

11	M-B DESCR	311111	6/15/82	COC 35896	COLLISTER WILLIAM
12	M-B DESCR	311111	6/15/82	COC 35896	COLLISTER WILLIAM
14	M-B DESCR	311111	6/15/82	COC 35896	COLLISTER WILLIAM
5	M-B DESCR	311111	6/15/82	COC 35896	COLLISTER WILLIAM
16	M-B DESCR	311111	6/15/82	COC 35896	COLLISTER WILLIAM
17	M-B DESCR	311111	6/15/82	COC 35896	COLLISTER WILLIAM
18	M-B DESCR	311111	6/15/82	COC 35896	COLLISTER WILLIAM
19	M-B DESCR	311111	6/15/82	COC 35896	COLLISTER WILLIAM

T. 7 S. R. 94 W

15	W2NE, W2SENE, E2SWNE; W2NESE, E2NWSE, E2SWSE; SESE	312011	6/15/82	COC 35912	AMBRA O&G
20	N2W2, S2NE, E2SENE	312011	6/15/82	COC 35913	AMBRA O&G

T. 3 S. R. 96 W

13	S2SW	312011	6/15/82	COC 35911	CROFF OIL CO
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DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

DATE 7/23/82

SERIAL NUMBER INDEX

STATE: COLORADO

SERIAL NUMBER	CASE TYPE	SECT	TOWNSHIP	RANGE	SECTION/	PROPERTY
					COUNTY	
000	31721	311111	06	9	S 87 W 17	WERT LAWRENCE M
000	31722	311111	06	10	S 88 W 1	WERT LAWRENCE M
000	31723	311111	06	10	S 88 W 14	WERT LAWRENCE M
000	31728	311111	06	4	N 77 W 12	VOYAGER PETRO INC
000	31737	311111	06	9	S 75 W 1	BURTON/HAWKS INC
000	31743	311111	06	9	S 75 W 1	MULL CONNIE
000	31744	311111	06	10	S 75 W 1	MULL CONNIE
000	31748	311111	06	19	S 70 W 7	MULL CONNIE
000	31758	311111	06	6	S 88 W 7	CHUDNOW JAMES M
		06	6	S 88 W 7		
000	31759	311111	06	31	S 68 W 7	CHUDNOW JAMES M
	31761	311111	06	9	S 68 W 8	CROFF OIL CO
000	31765	311111	06	6	S 69 W 19	CROFF OIL CO
		06	7	S 69 W 3		
000	31766	311111	06	6	S 69 W 19	CROFF OIL CO
		06	7	S 69 W 3		
000	31768	311111	23	33	N 2 E 3	KOCH INDUSTRIES INC
		23	34	N 2 E 23		
000	31783	311111	23	50	N 13 W 1	CHUDNOW JAMES M
		23	51	N 13 W 25		
000	31790	311112	06	7	N 58 W 2	GREENS WILLIAM G
000	31798	311111	23	34	N 4 W 1	NATOMAS N AMER INC
000	31799	311111	23	34	N 5 W 1	NATOMAS N AMER INC
		23	35	N 5 W 25		
000	31800	311111	23	35	N 5 W 4	NATOMAS N AMER INC

DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

DATE 7/23/82

SERIAL NUMBER INDEX

SEC-STATE: COLORADO

SERIAL NUMBER	CASE TYPE	SEC	TOWNSHIP	RANGE	SECTION	COUNTY	PROPRIETOR
COC 31804	311111	23	36	N 1 W	18	KOCH INDUSTRIES INC	
COC 33078	311111	06	8	S 68 W	3	CROFF OIL CO	
COC 33147	311111	06	18	S 67 W	2	SPEAR HOWELL	
COC 33188	311111	06	13	S 88 W	19	JUHAN EDWARD N	
COC 33218	311111	06	30	S 68 W	23	MILLER KYLE R	
COC 33228	311111	06	31	S 68 W	1	SPEAR HOWELL	
COC 33231	311111	06	31	S 66 W	2	SPEAR HOWELL	
COC 33242	311111	06	15	S 67 W	10	JACOB ARTHUR F	
COC 33362	311111	06	5	N 54 W	1	MEINHART ARTHUR E RUBENSTEIN IRWIN	
COC 33375	311111	06	5	N 53 W	6	MEINHART ARTHUR E RUBENSTEIN IRWIN	
COC 33421	311112	06	1	S 70 W	23	MEINHART ARTHUR E RUBENSTEIN IRWIN	
COC 33466	311112	06	33	S 48 W	26	LEONARD MINERALS CO	
COC 33472	311112	06	23	S 49 W	5	MEINHART ARTHUR E RUBENSTEIN IRWIN	
COC 33473	311111	06	23	S 49 W	5	MEINHART ARTHUR E RUBENSTEIN IRWIN	
COC 33476	311111	06	26	S 57 W	18	WALKER HUNTINGTON T	
COC 33480	311111	06	1	N 83 W	5	LOUELAS GEORGE P	
		06	2	N 83 W	19		
		06	1	N 84 W	1		
COC 33496	311111	06	1	N 83 W	7	LOUELAS GEORGE P	
		06	2	N 84 W	26		
COC 33501	311111	06	3	N 79 W	5	MOUNTAIN STATES EXPL	

DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RUN DATE 7/23/82

STATE COLORADO
RID 6TH PM

LOCATION INDEX

SUBDIVISION	CASE TYPE	DATE FILED	SERIAL NUMBER	PROPRIETOR
6 LOTS 13, 14, 21; 123-7	311111	10/09/79	COC 29006	TULLY F M
7 LOTS 5-8, 12, 14, 21, 22, 32, 34;	311111	10/09/79	COC 29006	TULLY F M
18 LOTS 5-9, 11; S2N2, S2N2, S2N2, S2N2, S2;	311111	10/09/79	COC 29006	TULLY F M
T. 6 N. R. 98 W				
1 LOTS 5-13; S2N2, S2; ALL	311111	10/09/79	COC 29006	TULLY F M
2 LOTS 5-8; S2N2; ALL	311111	10/09/79	COC 29007	TULLY F M
3 LOTS 5-8; S2N2; ALL	311111	10/09/79	COC 29007	TULLY F M
4 LOTS 5-14; S2N2, N2S2, S2S2, ALL;	311111	10/09/79	COC 29007	TULLY F M
5 LOTS 6, 12, 20, 22;	311111	10/09/79	COC 29072	TULLY F M
6 LOTS 1, 2, 10, 13, 20, 22, 24;	311111	10/09/79	COC 29072	TULLY F M
7 LOTS 1-13; E2E2; ALL	311111	10/09/79	COC 29072	TULLY F M
10 ALL;	311111	10/09/79	COC 29007	TULLY F M
11 ALL;	311111	10/09/79	COC 29008	TULLY F M
12 ALL;	311111	10/09/79	COC 29006	TULLY F M
13 E2; N2;	311111	10/09/79	COC 29006	TULLY F M
14 ALL;	311111	10/09/79	COC 29008	TULLY F M

DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RUN DATE 7/23/82

STATE COLORADO
ERID 6TH PM

LOCATION INDEX

T 6 N, 2, 98 W

SEC	SUBDIVISION	CASE TYPE	DATE FILED	SERIAL NUMBER	PROPRIETOR
15	E2, NW, N2SW, SESW;	311111	10/09/79	COC 29008	TULLY F M
16	LOTS 1-4; N2, N2SE;	311111	10/09/79	COC 29072	TULLY F M
17	LOTS 1;	311111	10/09/79	COC 29072	TULLY F M
23	NW, N2SW, SESW;	311111	10/09/79	COC 29008	TULLY F M

T 7 N, 2, 98 W

20	E2SW, SWSE;	311111	10/09/79	COC 29009	TULLY F M
28	E2E2, SWNE, E2NW;	311111	10/09/79	COC 29009	TULLY F M
29	N2NE, SENE, E2W2, NESE;	311111	10/09/79	COC 29009	TULLY F M
32	LOTS 1, 3, 8, 9; NENE;	311111	10/09/79	COC 29009	TULLY F M
33	NF, E2SW, SWSW, N2SE, SWSE;	311111	10/09/79	COC 29009	TULLY F M
34	N2, E2SW, SWSW, SE;	311111	10/09/79	COC 29009	TULLY F M
35	LOTS 2, 3, 6, 7; W2E2, E2W2, SWNW, W2SW;	311111	10/09/79	COC 29009	TULLY F M
732	LOTS 2, 4, 7, 10;	311111	10/09/79	COC 29009	TULLY F M

T 6 N, 2, 99 W

1	LOTS 5-8; S2N2, S2;	311111	10/23/80	COC 30869	MULL CONNIE
2	LOTS 5-8; S2N2, S2;	311111	10/23/80	COC 30869	MULL CONNIE
3	LOTS 5-8; S2N2, S2;	311111	10/23/80	COC 30869	MULL CONNIE

DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

DATE 7/23/82

PROPRIETOR INDEX

-STATE: COLORADO

ASE TYPE

086 LSE NONCOMP RUE LAND

PROPRIETOR NAME	PROPRIETOR NUMBER	SERIAL NUMBER	MER	TOWNSHIP	RANGE	SECTION/ COUNTY
		COC 34505	23	8 W	36 N	5
			23	9 W	36 N	1
LEWIS PHILLIP S		COC 34506	06	78 W	11 N	5
			06	78 W	12 N	19
		COC 34505	23	8 W	36 N	5
			23	9 W	36 N	1
LOVE OIL CO INC	W-56043	COC 34076	06	103 W	10 N	13
		COC 34077	06	102 W	9 N	5
		COC 34078	06	85 W	3 N	1
		COC 34079	06	23 W	1 N	17
			06	34 W	1 N	3
		COC 34422	23	12 W	47 N	1
		COC 34425	23	13 W	47 N	4
		COC 34428	23	13 W	48 N	18
		COC 35881	06	101 W	10 N	29
MARKER EDWIN F		COC 34181	06	90 W	11 S	1
			06	91 W	11 S	11
MARSH HENRY O		COC 25663	06	97 W	4 S	32
MCLISH W P		COC 34737	23	11 W	47 N	19
MEANY EDWARD A		COC 28382	06	39 W	11 S	25
MEINHART ARTHUR E		COC 28012	06	47 W	20 S	23
			06	47 W	21 S	1
		COC 29906	06	94 W	12 S	23
		COC 33362	06	54 W	5 N	1

DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

DATE 7/23/52

PROPRIETOR INDEX

STATE: COLORADO

USE TYPE

053 USE NONCOMP PUB LAND

PROPRIETOR NAME	PROPRIETOR NUMBER	SERIAL NUMBER	MER	TOWNSHIP	RANGE	SECTION/ COUNTY
	COC	33375	06	53	W 15	N 16
	COC	33473	06	49	W 23	S 5
	COC	34133	23	1	W 36	N 24
	COC	34134	23	5	W 35	N 32
MESSINGER JOHN L	COC	34022	06	35	W 12	N 34
	COC	34023	06	102	W 15	S 28
	COC	34023	06	103	W 15	S 28
	COC	34023	06	78	W 10	N 20
	COC	34023	06	78	W 11	N 7
	COC	34499	23	5	W 35	N 3
	COC	34500	23	5	W 36	N 15
	COC	34500	23	6	W 36	N 20
	COC	34501	23	9	W 35	N 1
	COC	34502	06	78	W 10	N 6
	COC	34502	06	78	W 11	N 20
	COC	34623	23	5	W 35	N 5
	COC	34623	23	5	W 36	N 34
METZINGER PAUL H	COC	22271	06	72	W 24	S 29
	COC	22272	06	73	W 23	S 35
	COC	22272	06	73	W 24	S 7
MILLER DUNCAN	COC	0122923	06	95	W 4	S 20
	COC	0122923	06	96	W 4	S 25
MILLER KYLE R	COC	33218	06	68	W 30	S 23
MILLER ROY G	COC	24633	06	37	W 2	N 15

Appendix 6
Project Management Plan
for
Automation of a Land and Minerals Management System
July 26, 1982

Appendix 7
Development Project Proposal
for an
Automated Oil and Gas Case File Management System
February 1982



⇒ W- DO YOU HAVE?

DPP = 53-3

IN REPLY REFER TO:

United States Department of the Interior

3100 (327)

DEPARTMENT OF THE INTERIOR
WASHINGTON, D.C. 20500

Rec'd. W.O. 870

2-18-82

From W.K. Hastings
W.O. 530.

W.K.

Memorandum

To: Deputy Director, Energy and Mineral Resources
Assistant Director, Onshore Energy and Mineral Resources

From: Chief, Division Oil and Gas

Subject: Development Project Proposal for an Automated Oil and Gas Case File Management System

The Division of Oil and Gas has prepared a draft Development Project Proposal (DPP) for an automated oil and gas case file management system. The DPP (Form 1081-1) and a narrative description of the proposal are enclosed for your review and approval.

The proposal includes program components to automate lease recordation and accounting functions, adjudicative processing of all noncompetitive lease offers and applications, simultaneous oil and gas program available lands listings, and quarterly workload analysis reports. The implementation of such a program will enhance administrative and fiscal planning, eliminate existing program redundancies, and expedite the oil and gas leasing program concomitant with the Bureau's efforts to streamline and accelerate the development of energy resources. In addition, it is anticipated that such a program will provide substantial assistance in efforts to increase access to lands for purposes of oil and gas development.

The DPP has been developed with technical assistance from several State Offices and the Denver Service Center and in full coordination with the Division of Information Systems (40-870).

Enclosures

cc: ✓ Mike McNeill (870)
Ed Smith (870)
Harold Walker (871)
DDRF-D 530:RF 530:HOLD
530:WHastings:gic:2/17/82:x37722

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

DEVELOPMENT PROJECT PROPOSAL
☒ BUREAUWIDE ☐ SPECIFIC

Rec'd W.D. 870
2-18-82
CWS

NUMBER	
Assigned (FO)	Subactivity (Field)
83-3	
Priority (WFO)	
Recommended lead office (Field)	

Project Title Automated Oil and Gas Case File Management System

Type of project

- | | | | |
|--|---|---|---|
| <input type="checkbox"/> Information Systems | <input checked="" type="checkbox"/> Energy and Minerals | <input type="checkbox"/> Res. and Environmental Areas | <input type="checkbox"/> Tech. Services |
| <input type="checkbox"/> Renewable Resources | <input type="checkbox"/> Lands and ROW | <input type="checkbox"/> Policy and Budget | <input type="checkbox"/> Administration |

Objective statement (summary) The objective of this proposal is to develop and implement an automated program to record, process and monitor oil and gas lease applications to expedite lease issuance, and enhance program planning and guidance and to eliminate the unnecessary annual processing functions and existing program redundancies. The proposed program involves the automation of specific oil and gas program functions which include 1) recordation and accounting advice for over-the-counter (OTC) Lease offers and simultaneous oil and gas (SOG) applications; 2) adjudicative processing for OTC offers and SOG applications; 3) inventory and compilation of lease stipulation file; and 4) quarterly workload analysis and reporting.

Justification (brief summary) The automation of the oil and gas program components leading to lease issuance will provide substantial assistance in meeting administrative objectives to establish an expedited leasing process, increase access to lands for purposes of oil and gas development and to eliminate the leasing backlog. This proposal will also enhance program planning and guidance and eliminate redundancies in the leasing process. This proposal is a priority item of the Division of Oil and Gas and responds to the Bureau's policies and objectives regarding the onshore oil and gas program.

COSTS SUMMARY		
ITEMS	NUMBER	AMOUNT
Workmonth		\$
Procurement		\$
Equipment		\$
TOTAL		\$

<input type="checkbox"/> Annual Work Plan Recommended FY	<input type="checkbox"/> Annual Work Plan Supplement to FY	<input type="checkbox"/> Continuing Project	% completed prior to this FY % to be completed this FY
<input checked="" type="checkbox"/> WO <input type="checkbox"/> SO <input type="checkbox"/> SC <input type="checkbox"/> BIFC/OCS	Office WO-500/510	Division WO-530	Originator's Name and Phone No. Jeff Zabler 343-7722

Recommended by (signature)

Date

Appendix 8
ALMR Program Package
March 15, 1982

ALMRS PROGRAM PACKAGE

TABLE OF CONTENTS

	<u>PAGE</u>
PROJECT JUSTIFICATION	1
ALMRS PROJECT APPROACH AND IMPLEMENTATION PLAN	6
LIST OF ASSUMPTIONS	11
PROGRAM SUMMARY TABLE	16
WORKLOAD/OUTPUT MATRICES	
4420 - DATA MANAGEMENT	17
4111 - OIL AND GAS	18
4212 - NONENERGY REALTY	19
NARRATIVES	
FY 1983	
4420	20
4111	21
FY 1984	
4420	23
4212	25
FY 1985	
Level B	
4420	27
4212	29
Level A	
4212	31
Level C	
4420	32
4212	33

GLOSSARY OF TERMS

Adjudication -	The legal processing of applications, entries, claims, etc., to assure full compliance with the public land laws and regulations; also the interpretation of statutes and regulations and their application to a particular set of facts.
Historical Index - (HI).	A chronological summary of all actions which affect, have affected or will affect the title to, disposition of, or use status of lands and resources within a township.
Master Title Plat - (MTP)	A composite of the survey plats of a township on which is shown the ownership and land status.
Plat -	As technically used by BLM, the drawing which represents the particular area included in a survey, such as a township, private land claim or mineral claim.
Serial Register Page - (SRP)	BLM maintains individual chronological records of each public land transaction. Each transaction (case) appears as a page in a serial register. A running record of each case, its inception and any actions on it is kept in book form in the land office of each public domain land state.
Status -	The information with respect to any particular parcel or tract of public land; its legal description, whether surveyed, the non-Federal rights or privileges which attach to it or its resources, and any pertinent information which may influence the operation of the public land laws so far as its use or disposal is concerned.
Survey -	The plat and field note record of the observations, measurements and monuments descriptive of the work performed.
Tract Books -	Designed primarily for the maintenance of permanent records of all transactions involving public domain lands. Companion records to the land office "status plat".

Automated Lands and Minerals Records System

General Narrative

The BLM has national responsibility for maintaining approximately 11 million valuable public land records documents including land survey plats, survey field notes, and master title plats or tract books. Not only are all BLM programs dependent upon these records, but they are also heavily used by other Federal agencies (Forest Service, MMS, and the GS), State Agencies and the public. The increasing workload resulting from the demand for access to the information contained in these records has caused great concern within the Bureau.

According to statistics published in Public Lands Statistics Tables and 1984 Budget document data the Bureau handles approximately 250,000 Lands and Mineral cases per year. This figure breaks down as follows:

<u>Case Type</u>	<u># Cases Pending at beginning of year</u>	<u># New Cases Opened</u>	<u>Total</u>
Lands	20,000	49,600	69,600
Minerals	<u>80,300</u>	<u>100,100</u>	<u>180,400</u>
Total	100,300	149,700	250,000

This workload is expected to continue and/or increase over the next few years. As a result of the Bureau's commitment is to 1) Streamline the leasing process; 2) Implement the Secretary's policy to increase access to lands for the purpose of oil and gas development; 3) Remain current on an increasing workload in post leasing actions; and 4) accelerate FLPMA land sales.

Manual Lands and Records System

The above commitments would be difficult to achieve using the Bureau's labor intensive manual Records System. Under this process each new case required maintaining a log, setting up a file, manually drafting necessary information on the Master Title Plat (MTP) and documenting needed information on the Historical Index. Any updates or changes to these cases also need to be made manually. The adjudication process could be a lengthy procedure since the records needed to conduct the process were in many instances kept in different locations.

Other problems resulting from the Manual Land and Minerals Records Systems were:

- Inadequate space to store and display large volumes of records and case files.
- Deterioration of valuable records due to aging and heavy use.
- Lost or misplaced documents or files.

—Difficulty in keeping information current due to manual updates.

—Difficulty in accessing Lands and Minerals Record information to track processes or summarize data for BLM Management or user needs.

One of the goals of the Bureau's Lands and Mineral System in accordance with Interior's MBO Program is to improve service to the public and to provide more efficient processing of lands and mineral cases.

The Automated Lands and Minerals Records System (ALMRS)

On July 9, 1982 the Director, BLM signed a decision document for implementation of the ALMRS project. ALMRS will be phased into all BLM States excluding Alaska by 1991. The Automated Lands and Minerals Records System focuses on:

- supporting oil and gas needs,
- supporting (FLPMA Land Actions); and
- making the Bureau's records more efficient, accessible and ultimately less expensive to maintain.

~~ALMRS will be comprised of automated case recordation, land description and status and geographic coordinate data on all active land and mineral cases. The system will be designed in increments to allow for logical progression from a manual to fully automated system. This will enable BLM to retire the Historical Index, Master Title and use-plats (MTP). It will produce the Serial Register Page (SRP) for active cases along with other tabular & statistical reports.~~

~~When fully implemented the system will contain data for approximately 46,000 townships. This is expected to be completed by FY 1991. The automated system will be designed to be fully interactive for data entry and file update. Each BLM office (State, District and Resource Area) will have terminals and printers. Once the system is installed other agencies will have terminal access for use and appropriate update. These agencies will include MMS, USGS, USFS, BIA, USFWS and others who have identified a need for this information.~~

~~ALMRS is expected to have a functional life span of 30 years. It is unlikely that either the leasing function or its attendant land status recording will change significantly. This system will eliminate the labor intensive present manual system through faster case processing and adjudication, automated program summaries, faster service to clientele, preparation of Simultaneous Oil & Gas lists and other lists as well as interface with the financial management system.~~

PHASES OF ALMRS

Phase I: Case recordation and program statistics

~~Phase I~~
This phase, fully operational at present, accommodates most active land and mineral cases types although initial emphasis is on oil and gas activity. Some modifications can be made to add remaining cases, types and data elements so that land sales, withdrawals, and other cases are included. All cases as of June 1, 1982 have been entered into the system. Phase I provides automated SRPs and reports of case counts. It is estimated that the Bureau's present Honeywell system in Denver will include some 250,000 oil and gas and other cases by December 1983. Phase I is being implemented on a Bureauwide basis.

Phase II: Case Processing with Land Description and Status Data

~~Phase II~~ ^{Phase II} includes entry of all relevant land area description data (survey) and existing cases affecting the current status of Federal land and mineral rights. This includes approximately 46,000 townships which contain land where the Federal Government has either surface or subsurface rights in the lower 48 states. It is anticipated that this caseload would be fully automated by FY 1991. Implementation of Phase II continues the features and benefits of Phase I and adds the capability to:

- validate legal land description data in new case applications;
- assist adjudication by automatically adjusting total acres in cases as land availability is determined;
- provide more comprehensive reporting; and
- Retire the Historical Index as townships are automated and brought "on line."

Phase II will be piloted in New Mexico and Arizona and subsequently phased into Bureauwide implementation 2 to 3 states per year.

Phase III: Case Processing with Geographic Coordinate Positions and Plat Graphics

~~Phase III is distinguished by automation of geographic coordinate position data for legal land description boundaries. This provides for additional automation of adjudication processing and visual displays of complete or selected status now shown on the MTP, use plats and tract book plats.~~ This requires entry of coordinates for points on perimeters of land description areas and integration with land status data via legal land description. Additional equipment will be needed in field offices to update land description boundary data and in turn the coordinates necessary to retrieve and display status plats on graphic computer terminal screens, screen copiers and plotters. Products added to Phase III include automated Master Title use plats and other map overlays needed for case processing and adjudication. There will be capability to interface with other agencies and the private sector. The USGS is expected to assist in design of Phase III. New or modified computer and telecommunication systems will be needed to properly support Phase III implementation. Phase III will be piloted and phased into the Bureau in the same way as Phase II.

Upon implementation of Phase III, ALMRS will be fully operational and all elements of the manual record system could be retired from daily service and maintenance.

Benefits of ALMRS

The automated data will be used to produce a variety of automated outputs eliminating some labor and redundant manual steps in the process. Benefits are also gained by faster case processing automated program summaries, faster service to clientele and automated transfer of data to other systems.

The following statistical data is taken from a "Benefit/Cost Analysis for the ALMRS" Report dated November 9, 1982 and prepared by staff at the BLM DSC. The report is based on function and time analysis conducted during a Bureau trial project. Benefits to the Bureau are addressed in the following matrix and non-BLM benefits are then discussed in a brief narrative.

A. BENEFITS TO THE BUREAU AS A RESULT OF ALMRS

This chart shows task areas in the Land and Minerals Records Systems where savings to the Bureau (in workmonths per year) can be attributed to implementation of ALMRS.

ALMRS PHASE	CASE PROCESSING # WM saved per year	RECORD QUERY # WM saved per year	REPORTING # WM saved per yr	TOTAL # WM saved per year
I CASE RECEIVING AND REPORTING	1,202 WM	79 WM	77 WM	1,358 WM
II CASE PROCESSING WITH LAND DESCRIPTION AND STATUS DATA	1,898 WM	29 WM	11 WM	1,938 WM
I & II TOTAL	3,100 WM	108 WM	88 WM	3,296 WM
III CASE PROCESSING WITH COORDINATE POSITIONS AND PLAT GRAPHICS	923 WM	414 WM	984 WM	2,321 WM
I, II & III TOTAL	4,023 WM	522 WM	1,072 WM	Total Annual Savings Bureauwide 5,617 WM

The Non-BLM users also will gain benefits from ALMRS.

Phase I:

Public access to active case data will greatly aid clients in their planning by providing commonly sought data such as cases opened and closed by case type and location. An automated query can save public approximately five minutes per query.

Phase II:

Shorter case processing time will enable clients to save approximately 3 months per application and will eliminate the possibility of tying up funds in pending applications.

Savings to the U.S. Forest Service by having access to current status has been estimated as 4.3 WM's per million acres.

Phase III:

Commerical, industrial, individuals and other government users having access to automated plats and capability to selectively retrieve data by area, case type and action criteria will save each user approximately 2 minutes per query.

Summary

It is estimated that BLM will save approximately 5617 workmonths per year once all three phases of ALMRS are fully operational Bureauwide. This savings will enable the Bureau to focus attention on maintaining a system that is free of backlogs, is totally efficient, streamlined, up to date and responsive to all user needs.

ALMRS PROJECT APPROACH AND IMPLEMENTATION PLAN

The overall approach to Bureauwide implementation of the ALMRS project is graphically displayed in Figure 1.

Phase I has been implemented Bureauwide. Data entry for all oil and gas cases will be completed by end of FY 83, and all other cases by the end of FY 84.

The data base for Phase II will be completed by the end of FY 84. At that time Phase I and Phase II capabilities will merge. All States will be entering case data in Phase II format even though all States will have not collected additional survey and status data necessary to begin Phase II.

Pilot Approach

Phase II will be piloted in New Mexico and Arizona. New Mexico was chosen because it has heavy lands and mineral case activity and a difficult administrative structure. Arizona, on the other hand, has little case activity and a rather simple administrative structure. The thought behind this approach was to define and address Phase II problems in Arizona and test the modified system in New Mexico.

By the end of FY 84 the following will have been accomplished:

- Phase II design will be essentially complete, with some programming for outputs still go on.
- Phase II data collection in New Mexico and Arizona will be completed.
- Training for Phase II will be completed in Arizona and New Mexico.

The Phase II pilot will begin in New Mexico and Arizona at the beginning of FY 85. The pilot will be monitored through FY 85 and at the end of FY 85 Phase II will be evaluated.

Phase III will also be piloted in New Mexico and Arizona. The goal is to ensure that all three phases are successfully operational before implementing the entire system Bureauwide.

By the end of FY 85 the following accomplishments will have been achieved:

- Phase III design will be essentially completed.
- Phase III data collection in New Mexico and Arizona will be completed.
- Training for Phase III will be completed in Arizona and New Mexico.

Phase III pilot will begin in New Mexico and Arizona at beginning of FY 86 and will be monitored throughout the fiscal year. Evaluation of Phase III will take place at the end of FY 86.

FIGURE 1

PROJECT APPROACH AND IMPLEMENTATION PLAN

ACTIVITY	FY 83	FY 84	FY 85	FY 86
PHASE I				
1. Rework	D-200 (4420)			
2. System Operation	D-400 (4111)			
a. O/G entry	*SO RIPS (4111)	*SO		
b. Other lands & minerals	*SO.	*SO		
c. system maint.	D-200 (4420)	D-200 (4420)		
d. tech. assist.	D-400 (4111)	D-400 (4212)		
3. Hardware (terminals & disk storage)	*D-200 Equip. (4420)			
PHASE II				
1. Determine User Requirements.	D-400 (4111) *USGS			
2. Design Phase II				
a. Conceptual		D-400 (4111) *USGS		
b. Data Base		*D-200 (4420) *USGS		
c. Programming		D-200 (4420)		
c. Testing			D-200 (4420)	
3. Training				
a. Packaging		D-400 (4111 & 4212) *AA-130		
b. Conduct: NM & AZ			*D-200 (4212) (records)	
c. Conduct: OR & UT			D-400 (4212)	

FIGURE 1 (continued)

ACTIVITY	FY 83	FY 84	FY 85	FY 86
PHASE II (cont'd.)				
4. Hardware				
a. NM & AZ				
1) tele.		* D-200 Equipment (4420)		
2) Level 6 upgrade				
3) terminals & printers				
b. OR & UT				
1) tele.		*D-200 Equipment (4420)		
2) Level 6 upgrade				
3) terminals & printers				
c. Procure DPS8 CPU		* D-200 Equipment (4420)		
5. Test Phase II AZ & NM				
a. Data Coll.		D-400 (4111) AZSO (4212) NMSO (4212)		
b. Tech. Asst.				
c. Operations		D-400 (4212) D-200 (4420)		
d. Syst. Maint.			*AZSO & NMSO	
e. Imp. Asst.			D-200 (4420) ADP *D-200 Records	
f. Evaluate			D-400 (4212)	
6. OR & UT			D-200 (4420) D-400 (4212) AA-105 (4212) *NMSO & AZSO	
a. Data Coll.		ORSO (4212) UTSO (4212)		
b. Tech. Asst.				
c. Operations		D-400 (4212) D-200 (4420)		
7. WY Data Collection				
			WYSO (4212) D-400 (4212) D-200 (4420)	

FIGURE 1 (concluded)

ACTIVITY	FY 83	FY 84	FY 85	FY 86
PHASE III				
1. Determine Use Requirements		D-400 (4111 & 4212) *USGS		
2. Design Phase III				
a. Conceptual			D-200 (4420) D-400 (4212) *USGS	
b. Data Base			D-200 (4420) *USGS	
c. Programming				
d. Testing			D-200 (4420) *USGS	
3. Training				
a. Packaging			D-400 (4212) *USGS	
b. Conduct: NM & AZ			*AA-130	
c. Conduct: OR & UT			D-400 (4212) *D-200 Records	
4. Hardware				
a. NM & AZ		* D-200		
b. OR & UT			Equipment (4420)	
5. Test Phase III AZ & NM				
a. Data Coll.			AZSO (4212) NMSO (4212) *USGS	
b. Tech. Asst.			D-400 (4212) D-200 (4420) *USGS	
c. Operations				
d. Syst. Maint.				
e. Imp. Asst.				
f. Evaluate				

Bureauwide Implementation

Following pilot state implementation, other states will be phased into the program two at a time in the following order:

	Phase II	Phase III
Oregon and Utah	FY 86	FY 87
Wyoming and Nevada	FY 87	FY 88
Colorado and California	FY 88	FY 89
Idaho and Montana	FY 89	FY 90

Due to the magnitude of data collection needs and quality of existing survey data in Eastern States, this entity will be phased in over each of the fiscal years as funds are available in each year.

The justification for this schedule of implementation of each of the States is due to several factors, including:

1. Amount of existing data in a compatible form for ALMRS.
- ✓ 2. Expressed interest to utilize ALMRS as soon as possible.
3. Workload and case activity.
4. Universal geographic coverage by ALMRS.

Data collection for each of the States will be done (for each Phase) one or two years prior to implementation. Equipment and training will be accomplished the prior year to prepare each State for phase implementation. In general, funds will be spent for data collection before equipment due to timing needs for data collection. Phase II data collection will occur in FY 84 for Oregon and Utah and Phase II equipment and training for these States will be obtained in FY 85. Phase III needs would follow in FY 86 for these States. Wyoming Phase II data collection would occur in FY 85 with equipment and training being obtained at Level C funding in FY 85 or in FY 86. Eastern States would receive funds for Phase II data collection at Level C in FY 85 and in FY 86. The rest of the States would follow a similar course in the out years.

The overall project goal is that by 1991, the ALMRS program would be fully implemented in all States and would become part of normal Bureau operations.

PACKAGE ASSUMPTIONS

The following assumptions and explanations support the budget for ALMRS for fiscal years 1983, 1984 and 1985. Discussions are broken out under the following topics:

- General
- Equipment
- Data Collection

General

1. Two average work month costs were used to simplify the budget process of funding work on ALMRS by DSC, the States and the Washington Office. The process for obtaining these figures is discussed below.
 - a. For work on ALMRS from Subactivity 4420, an average work month cost of \$3000 was used. This is because D-200 is the only entity doing development work out of 4420 for ALMRS and their historical work month cost for this project has been \$3000.
 - b. For work on ALMRS from Subactivity 4111 in FY-83 and 4212 in FY 84 and FY 85, an average work month cost of \$3200 was used. This figure was arrived at because work done under 4111 in FY 83 is similar to work done in FY 84 and FY 85 in 4212. The historical cost of work on ALMRS in Subactivity 4111 has been \$3200 and without further historical activity in the States and Washington, this work month cost was used for all work on ALMRS funded out of 4111 and 4212.
2. AA-105 (ALMRS Project Office) was given 3 extra work months in FYs 83, 84 and 85, to support an additional amount of expected temporary assignments to assist the Office over the next 3 years.
3. All budget estimates were made using D-200 as the source for equipment estimates and D-400 as the source for data collection costs. Costs were also obtained from the report entitled Planning and Budget Considerations for an Automated Lands and Minerals Record System, dated July 6, 1982.
4. Workload elements were determined through existing workload elements used in 4420 and those that would apply to ALMRS work in 4111 and 4212. Due to the development and assistance nature of work on this project, units can only be assigned to data collection and training work.
5. Funds were divided between only Subactivities 4420 and 4212 in FY 85, because work on ALMRS in this year is similar to development and assistance work in FY 84, but only in different states.

Equipment

Several assumptions were made to arrive at equipment estimates for the ALMRS project. The equipment purchases for the project are displayed on Table 1. Assumptions to support these estimates are given below:

1. All equipment purchases will be made out of funds from Subactivity 4420. In FY 83, \$210,000 is needed for equipment purchases which was not available in the 4420 cost target, but was available in the 4111 cost target. The budget for the project shows this cost being transferred from 4111 to 4420 in FY 83. However, this cost could be left in 4111 and handled as a line item for ADP purchases.
2. In FY 83, 60 terminals are slated for purchasing to assist in Phase I data entry at the state-level. These terminals can be obtained under existing procurement authority. The location for the 60 terminals has not yet been determined, pending feedback from the States on problems in meeting deadlines for oil and gas and lands cases. It is recognized that the utility of these terminals is based upon reprioritization of current uses of State Level 6 computers, due to the fact that no funds or procurement authority exist to upgrade Level 6s for more terminal usage.
3. Upgrade of the DSC Honeywell System (6680) was budgeted for FY 83, FY 84 and FY 85. In FY 83, procurement authority exists to purchase \$50,000 of disk storage needed to store the amount of Phase II data collected in FY 1984. In FY 84 a central processing unit and disk storage would be purchased to support the data storage and manipulation needs of the two pilot States (Arizona and New Mexico) and data collection needs of Oregon and Utah. In FY 85, \$50,000 would be used to purchase additional disk storage for data collection and manipulation needs for New Mexico, Arizona, Oregon, Utah and Wyoming.
No cost shown for FY 84 CPU proc.
4. Equipment purchases for the States were budgeted so Phase II needs for the pilot States would be purchased by FY 84 and for the next 2 States by FY 85. Equipment needs for the next State (Wyoming) could only be purchased at Level C funding in FY 85.
5. All estimates for equipment costs were made assuming a terminal and hard copy printer in every detached office within each State, with 3 terminals and 1 hardcopy printer for each State Office. For Oregon, 2 terminals and 1 printer were placed in District Offices with attached Resource Area Offices.
6. Telecommunications costs were determined using a worst case analysis of costs for a dedicated line to every detached office within a State from the State Office.
7. Phase III equipment needs were estimated using a worst case figure of \$130,000 per each graphics terminal. The Phase III user requirements and data base design have not yet been determined and, thus, equipment types are not known so the worst case figure was used. It was estimated that 5 terminals would be needed for each of the pilot States (1 for the State Office and each District Office) and 1 terminal would be needed at DSC to assist in implementation of Phase III.

Subactivity 4420Project ALMRSDate February 18, 1983Page 1 of 2

TABLE 1

ALMRS EQUIPMENT BUDGET
(including telecommunications costs)

Service/Equipment	FY '83	FY '84	FY '85
<u>STATES</u> to be termined (Phase I) terminals @ \$2650	\$ 160,000		
<u>MEXICO</u> (Phase II and) terminals (@ \$2650) printers (@ \$1900) Level 6 Upgrade telecommunications equipment recurring Graphics Terminals (\$130,000)		\$ 45,000 \$ 29,000 \$ 61,000 \$ 27,000 \$ 35,000	\$ 35,000 \$ 650,000
<u>EL SALVADOR</u> (Phase II and) terminals (@ \$2650) printers (@ \$1900) Level 6 Upgrade telecommunications equipment recurring Graphics Terminals (\$130,000)		\$ 42,000 \$ 27,000 \$ 20,000 \$ 20,000	\$ 20,000 \$ 650,000
<u>GUATEMALA</u> (Phase II) terminals (@ \$2650) printers (@ \$1900) Level 6 Upgrade telecommunications equipment recurring			\$ 64,000 \$ 23,000 \$ 43,000 \$ 48,000 \$ 36,000
<u>CHINA</u> (Phase II) terminals (@ \$2650) printers (@ \$1900) Level 6 Upgrade telecommunications equipment			(purchase at Level C or in FY 1986 only) \$ 53,000 \$ 34,000 \$ 58,000 \$ 66,000 \$ 48,000

Subactivity 4420
 Project ALMPS
 Date February 18, 1983
 Page 2 of 2

ALMPS EQUIPMENT BUDGET

Office/Equipment	FY '83	FY '84	FY '85
<u>II</u> (Phase II) terminals (@ \$2650) printers (@ \$1900) Level 6 Upgrade Telecommunications Equipment Recurring			\$ 64,000 \$ 42,000 \$ 62,000 \$ 69,000 \$ 60,000
PS8 Disk Storage PU for DPS8 Graphics Terminal (@ \$130,000)	\$ 50,000	\$ 960,000	\$ 50,000 \$ 130,000
TOTAL	\$ 210,000	\$ 1,266,000	Level A and B \$ 2,046,000 Level C \$ 2,305,000

- i. Substantial expenditures for equipment will not be made until detailed workload analyses have been made to support equipment needs for ALMRS.

Data Collection

1. Data collection costs were estimated using figures from the July 6, 1982, report entitled Planning and Budget Considerations for an Automated Lands and Records System. Work months were attached to the costs using an average work month cost of \$3200. However, it can be left to each of the State's discretion whether the data would be collected inhouse, using available FTE or through contract basis with State oversight.
2. In FY 83, D-400 was given 16 work months to assist states in Phase I data entry and to initiate the data collection process for Phase II. In order to begin the data collection at the beginning of FY 84 for New Mexico and Arizona, it will be necessary for D-400 to initiate the contracting process to collect that data in late FY 83.

The Program Package for ALMRS is presented below. The package is divided into:

- Program Summary Table
- Workload/Output Matrices (on hand filled in tables) for Subactivities
 - 4420
 - 4111
 - 4212
- Narratives by Subactivity for
 - FY 83
 - FY 84
 - FY 85 Levels A, B & C

FY 1905

Activity	FY 1902		FY 1903		FY 1904		LEVEL A		LEVEL B		LEVEL C	
	WH	(\$000)	WH	(\$000)	WH	(\$000)	WH	(\$000)	WH	(\$000)	WH	(\$000)
Subactivity												
1 Oil & Gas Lending ALMRS												
2 Coal Lending												
3 Geothermal & Uranium Lending												
4 Oil Shale & Tar Sands Lending												
11 Mineral Material Sales												
12 Mining Law Administration												
13 Mineral Lending												
11 Energy Realty												
12 Nonenergy Realty-Lower 40 ALMRS												
Alaska Lands Program												
13 Withdrawal Process. & Review												
10 Forest Management												
21 Wild Horse & Burro Mgmt.												
22 Grazing Management												
31 Cultural Resource Management												
32 Wilderness Management												
33 Recreation Resource Mgmt.												
40 Soil, Water, and Air												
50 Wildlife Habitat Mgmt.												
60 Fire Management												
10 Planning												
20 Data Management ALMRS												
10 Cadastral Survey-Alaska												
20 Cadastral Survey-Other States												
00 Firefighting												
40 Resource Protection												
11 Building Maintenance												
12 Recreation Maintenance												
13 Transportation Maintenance												
20 Engineering Services												
00 General Administration												
20 Equal Employment Opportunity												
00 Construction												
00 Access												
00 Land Acquisition												
3 Total	299	1,155	1,457	5,974	1,029	5,377	1,216	5,974	1,322	6,571		

1985

ACTIVITY 4000 - ALMHS

FY 1983

FY 1984

LEVEL A

LEVEL B

LEVEL C

LEVEL D

ACTIVITY	FY 1983			FY 1984			LEVEL A			LEVEL B			LEVEL C			LEVEL D		
	UNITS	WPI	(000)	UNITS	WPI	(000)	UNITS	WPI	(000)	UNITS	WPI	(000)	UNITS	WPI	(000)	UNITS	WPI	(000)
Development	95	285		165	495		165	495		165	495		165	495		165	495	
Medical Assistance	3	9		3	9		3	9		3	9		3	9		3	9	
Operation & Maintenance	20	60		20	60		20	60		20	60		20	60		20	60	
Personnel	0	210		0	1,164		0	1,778		0	1,778		0	1,923		0	1,923	
Communications	0	0		0	102		0	268		0	268		0	302		0	302	
Port	2	6		2	6		2	6		2	6		2	6		2	6	
TOTAL	120	570		190	1,836		190	2,616		190	2,616		190	2,875		190	2,875	

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ALMRS - ALMRS 1903

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Team Management

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Chemical Assistance

Training (Trained)

Shipping (// Entered)

710

TOTAL

Subactivity: Data Management - ALMRSA. Cost Target Summary:

1. Work Months	
# Permanent	<u>120</u>
# Other	<u>0</u>
Total WM	<u>120</u>
Average WM Cost	<u>\$ 3,000</u>
Total WM Cost	<u>\$ 360,000</u>
2. Equipment Cost	<u>\$ 210,000</u>

Total Cost Target: \$ 570,000

B. Feedback on Program Cost Target:

This proposed cost target will be expended on the following tasks and accomplishments. Tasks appear under the specific workload elements.

<u>STAFF</u>	<u>TASKS</u>	<u>WMS</u>	<u>DOLLARS</u>	<u>ACCOMPLISHMENTS</u>
D-200	<u>Development:</u>			
	- Rework on Phase I	95	\$ 285,000	- Phase I complete
	- Conceptual Design of Phase II			- Phase II initiated
	- Initiate Data Base and Programming Design of Phase II			
	<u>Technical Assistance:</u>	3	\$ 9,000	
	- Provide assistance to States during Phase I data entry			
	<u>Operation & Maintenance:</u>	20	\$ 60,000	- Phase I in operation in all states
	- Provide system maintenance for Phase I			
	<u>Equipment:</u>			
	- Obtain equipment for Phase I (60 terminals and disk storage)	0	\$ 210,000	- Phase I equipment obtained
	<u>Support:</u>			
	- Provide administrative support	2	\$ 6,000	
	TOTAL	120	\$ 570,000	

FY 83 NARRATIVE

FY 83

Subactivity 4111

Project ALMRS

Date February 18, 1983

Page 1 of 2

Subactivity: Oil & Gas Leasing - ALMRS

A. Cost Target Summary:

1. Work Months	
# Permanent	179
# Other	0
Total WM	179
Average WM Cost	\$ 3,200
Total WM Cost	\$ 572,800
2. Equipment Cost	0
3. Miscellaneous Cost	\$ 12,200
(Printing, Office Machinery and Furniture)	
Total Cost Target	\$ 585,000

B. Feedback on Program Cost Target:

This proposed cost target will be expended on the following tasks and accomplishments. Tasks appear under the specific workload elements.

<u>STAFF</u>	<u>TASKS</u>	<u>WMs</u>	<u>DOLLARS</u>	<u>ACCOMPLISHMENTS</u>
AA-105 ALMRS Project Office	<u>Program Management:</u> - Provide Washington Office oversight, management and coordination - Prepare project plans (life cycle; workload analysis; hardware needs) - Perform overall evaluation of project	33	\$ 105,600	- Phase I in operation in all states - Phase II initiated
D-400	<u>Development:</u> - Assist D-200 in rework of Phase I - Determine User requirements for Phase II - Initiate determination of User requirements of Phase III with USGS	45	\$ 144,000	- Phase I in operation - User requirements for Phase II identified
	<u>Technical Assistance:</u> - Provide technical assistance to states during Phase I operation - Initiate Phase II data collection (contracting process)	16	\$ 51,200	- Support for states so Phase I data in system - Phase II data collection process initiated

FY 83 NARRATIVE

FY 83
 Subactivity 4111
 Project ALMRS
 Date February 18, 1983
 Page 2 of 2

Subactivity: Oil & Gas Leasing - ALMRS

<u>STAFF</u>	<u>TASKS</u>	<u>WMS</u>	<u>DOLLARS</u>	<u>ACCOMPLISHMENTS</u>
	<u>Training:</u> - Prepare training package for Phase II	18	\$ 57,600	- Training package for Phase II training initiated
	<u>Support:</u> - Provide management and administrative support.	18	\$ 57,600 \$ 10,000 (Misc.)	
D-140	<u>Support:</u> - Assist D-400 in training packaging, editing manuals and preparing briefings	4	\$ 12,800 \$ 2,200 (Misc.)	
RIPS Staff	<u>Cases:</u> - Entry of Oil and Gas cases in Phase I for states	45	\$ 144,000	- Support for states so oil and gas cases entered by end of FY
	TOTAL	179	\$ 585,000	

FY 84 NARRATIVE

FY 84
 Subactivity 4420
 Project ALMRS
 Date February 18, 1983
 Page 1 of 2

Subactivity: Data Management - ALMRS

A. Cost Target Summary:

1. Work Months	
# Permanent	190
# Other	0
Total WM	190
Average WM Cost	\$ 3,000
Total WM Cost	\$ 570,000
2. Equipment Cost	\$ 1,164,000
3. Telecommunications	\$ 102,000
Total Cost Target	\$ 1,836,000

B. Feedback on Program Cost Target:

This proposed cost target will be expended on the following tasks and accomplishments. Tasks appear under the specific workload elements.

<u>STAFF</u>	<u>TASKS</u>	<u>WMS</u>	<u>DOLLARS</u>	<u>ACCOMPLISHMENTS</u>
D-200	<u>Development:</u>			
	- Design of Phase II data base & programming)	165	\$ 495,000	- Data Base Design of Phase II complete
	- Conceptual and Data Base Design for Phase III			- Phase III design initiated
	<u>Technical Assistance:</u>	3	\$ 9,000	- Support given to states so Phase I in operation and Phase II data collected for NM & AZ
	- Assistance to states during Phase II (survey and status) data collection			
	- Assistance to states during Phase I operation			
	<u>Operation & Maintenance:</u>	20	\$ 60,000	- Phase I in operation in states
	- System Maintenance for Phase I			
	<u>Equipment:</u>			
	- Procure Phase II equipment for NM & AZ	0	\$ 1,164,000	- Equipment obtained for Phase II to support NM & AZ
	- Procure CPU for DPS8 for data storage in central computer			

FY 84 NARRATIVE

FY 84
Subactivity 4420
Project ALMRS
Date February 18, 1983
Page 2 of 2

Subactivity: Data Management - ALMRS

<u>STAFF</u>	<u>TASKS</u>	<u>WMS</u>	<u>DOLLARS</u>	<u>ACCOMPLISHMENTS</u>
	<u>Telecommunications:</u>	0	\$ 102,000	
	- Obtain telecommunications needs for NM & AZ			
	<u>Support:</u>	2	\$ 6,000	
	- Provide management and administrative support			
	TOTAL	190	\$1,836,000	

Subactivity: Nonenergy Realty - ALMRSA. Cost Target Summary:

1. Work Months	
# Permanent	1,267
# Other	0
Total WM	1,267
Average WM Cost	\$ 3,200
Total WM Cost	\$ 4,057,400
2. Equipment Cost	0
3. Miscellaneous Costs	\$ 80,600
(Printing, Office Machinery and Furniture)	
Total Cost Target	\$ 4,138,000

B. Feedback on Program Cost Target:

The proposed cost target will be expended on the following tasks and accomplishments. Tasks appear under the specific workload elements.

<u>STAFF</u>	<u>TASKS</u>	<u>WMS</u>	<u>DOLLARS</u>	<u>ACCOMPLISHMENTS</u>
AA-105 ALMRS... Project Office	<u>Program Management:</u> - Provide Washington Office oversight and coordination - Perform evaluations of project success	53	\$ 169,600 \$ 70,600 (Misc.)	- Phase II data collected for NM, AZ, OR & UT (14,648 total townships) - Phase II essentially complete (except for programming and testing design) - Phase III initiated
D-400	<u>Development:</u> - Determine user requirements for Phase III - Assist in conceptual design of Phase III	45	\$ 144,000	- User requirements for Phase III identified - Phase III initiated
	<u>Technical Assistance:</u> - Provide assistance to states in data entry of lands and minerals cases (Phase I) - Provide technical assistance to AZ, NM, OR & UT during collection of survey and status (Phase II) data by providing quality control	9	\$ 28,800	- Support given so Phase I data in system - Support given so Phase II data collected for AZ, NM, OR & UT (14,648 total townships)

FY 84 NARRATIVE

FY 84

Subactivity 4212

Project ALMRS

Date February 18, 1983

Page 2 of 2

Subactivity: Nonenergy Realty - ALMRS

<u>STAFF</u>	<u>TASKS</u>	<u>Wms</u>	<u>DOLLARS</u>	<u>ACCOMPLISHMENTS</u>
	<u>Training (# Trained):</u>	18	\$ 57,600	
	- Complete packaging for training for Phase II			-AZ & NM trained for use of Phase II
	- Train AZ & NM for use of Phase II			
	<u>Support:</u>	18	\$ 57,600	
	- Provide management and administrative support		\$ 10,000 (Misc.)	
	<u>Townships #:</u>			
Arizona State Office	- Collect new survey and status data for Phase II (3,472 townships)	211	\$ 677,000	- All Phase II data collected and in system for AZ
	Contract or in-house			
	- Administer contracts and oversee Phase II data collection (quality control)	55	\$ 176,200	
New Mexico State Office	- Collect new survey and status data for Phase II (4,176 townships)	254	\$ 814,300	- All Phase II data collected and in system for NM
	Contract or in-house			
	- Administer contracts and oversee Phase II data collection (quality control)	66	\$ 212,000	
Oregon State Office	- Collect new survey and status data for Phase II (4,411 townships)	269	\$ 860,100	- All Phase II data collected and in system for Oregon
	Contract or in-house			
	- Administer contracts and oversee Phase II data collection (quality control)	70	\$ 223,900	
Utah State Office	- Collect new survey and status data for Phase II (2,589 townships)	158	\$ 504,900	- All Phase II data collected and in system for Utah
	Contract or in-house			
	- Administer contracts and oversee Phase II data collection (quality control)	41	\$ 131,400	

TOTAL

1 267

\$ 1,138,000

FY 85
Levels A and B
Narrative

FY 85
Subactivity 4420
Project ALMPS
Date February 18, 1983
Page 1 of 2

Subactivity: Data Management - ALMPS

A. Cost Target Summary:

1. Work Months	
# Permanent	190
# Other	0
Total WM	190
Average WM Cost	\$ 3,000
Total WM Cost	\$ 570,000
2. Equipment Cost	\$ 1,778,000
3. Telecommunications	\$ 268,000
Total Cost Target	\$ 2,616,000

B. Feedback on Program Cost Target:

This proposed cost target will be expended on the following tasks and accomplishments. Tasks are listed under specific workload elements.

<u>STAFF</u>	<u>TASKS</u>	<u>WMS</u>	<u>DOLLARS</u>	<u>ACCOMPLISHMENTS</u>
D-200	Development:	165	\$ 495,000	- Phase II completed and in operation in New Mexico and Arizona
	- Complete programming and test phase of Phase II			- Data Base Design of Phase III complete
	- Complete Data Base design of Phase III			
	- Implement programming phase of Phase III			
	Technical Assistance:	3	\$ 9,000	- Decision made to proceed with Phase II and Phase III
	- Evaluate results of Phase II in New Mexico and Arizona			
	- Provide assistance to Oregon and Utah in collection of Phase II data and to AZ & NM in collection of Phase III data			
	Operation & Maintenance:	20	\$ 60,000	- Phase II in operation in New Mexico and Arizona
	- Provide system maintenance of Phase II during pilot state (NM & AZ) operation			

FY 85
Levels A and B
Narrative

FY 85
Subactivity 4420
Project ALMRS
Date February 18, 1983
Page 2 of 2

Subactivity: Data Management - ALMRS

<u>STAFF</u>	<u>TASKS</u>	<u>WMS</u>	<u>DOLLARS</u>	<u>ACCOMPLISHMENTS</u>
	<u>Equipment:</u>	0	\$ 1,778,000	- Phase II equipment obtained for Oregon and Utah
	- Procure equipment for Phase II in Oregon & Utah and for Phase III for NM & AZ			- Phase III equipment obtained for NM & AZ
	<u>Telecommunications:</u>			
	- Provide telecommunications support for Phase II and III in NM, AZ and Phase II in Oregon and Utah	0	\$ 268,000	
	<u>Support:</u>	2	\$ 6,000	
	- Provide administrative support			
	<u>TOTAL</u>	<u>190</u>	<u>\$2,616,000</u>	

FY 85
Level 3 Narrative

FY 85
Subactivity 4212
Project ALMRS
Date February 18, 1983
Page 1 of 2

Subactivity: Nonenergy Realty - ALMRS

A. Cost Target Summary:

1. Work Months	
# Permanent	<u>1,026</u>
# Other	<u>0</u>
Total WM	<u>1,026</u>
Average WM Cost	<u>\$ 3,200</u>
Total WM Cost	<u>\$ 3,284,300</u>
2. Equipment Cost	<u>\$ 0</u>
3. Miscellaneous Cost	<u>\$ 73,700</u>
(Printing, Office Machinery)	
Total Cost Target	<u>\$ 3,358,000</u>

B. Feedback on Program Cost Target:

This proposed cost target will be expended on the following tasks and accomplishments. Tasks are listed under specific workload elements.

<u>STAFF</u>	<u>TASKS</u>	<u>WMS</u>	<u>DOLLARS</u>	<u>ACCOMPLISHMENTS</u>
AA-105 ALMRS Project Office	<u>Program Management:</u> - Provide Washington Office coordination and oversight - Evaluate results of Phase II operation in New Mexico and Arizona	53	\$ 169,600 \$ 63,700 (Misc.)	- Phase II in operation in NM & AZ - Decision to proceed with Phase II and III made - Phase III initiated
D-400	<u>Development:</u> - Assist D-200 in design of Phase III	18	\$ 57,600	- Data Base Design of Phase III complete and programming essentially complete
	<u>Technical Assistance:</u> - Provide implementation to NM & AZ during Phase II - Provide assistance to NM & AZ during collection of coordinate (Phase III) data by providing quality control procedures	27	\$ 86,400	- Phase II in operation in New Mexico and Arizona - Support for New Mexico and Arizona so Phase III data is collected (for 7,648 townships) - Support for Wyoming State Office during Phase II data collection (for 3,714 townships) - Decision to proceed with

FY 85
 Subactivity 4212
 Project ALMRS
 Date February 18, 1983
 Page 2 of 2

Subactivity: Nonenergy Realty - ALMRS

<u>STAFF</u>	<u>TASKS</u>	<u>WMS</u>	<u>DOLLARS</u>	<u>ACCOMPLISHMENTS</u>
D-400 (continued)	- Provide technical assistance to Wyoming State Office during collection of Phase II data			
	- Evaluate results of Phase II operation in NM & AZ			
	<u>Training (#)</u>			
	- Train NM & AZ for use of Phase III	27	\$ 86,400	- New Mexico and Arizona trained for use of Phase III
	- Train Oregon and Utah for use of Phase II			- Oregon and Utah trained for use of Phase II
	<u>Support:</u>			
	- Provide administrative and Management support	18	\$ 57,600 \$ 10,000 (Misc.)	
Arizona State Office	<u>Townships (#)</u>			
	- Collect coordinate data for 3,472 townships	208	\$ 666,000	- Phase III data collected for Arizona (3,472 townships)
	- Oversee collection of Phase III data	62	\$ 201,000	
New Mexico State Office	- Collect coordinate data for 4,176 townships	250	\$ 801,000	- Phase III data collected for New Mexico (4,176 townships)
	- Oversee collection of Phase III data	77	\$ 246,000	
Wyoming State Office	- Collect survey & status data (Phase II) for 3,714 townships	226	\$ 724,200	- Phase II data collected for Wyoming (3,714 townships)
	- Oversee collection of Phase II data (quality control)	60	\$ 188,500	
	TOTAL	1,026	\$3,358,000	

FY 85
Level A Narrative

FY 85
Subactivity 4212
Project ALMRS
Date February 18, 1983
Page 1 of 1

Subactivity: Nonenergy Realty - ALMRS

A. Cost Target Summary:

1. Work Months	
# Permanent	<u>839</u>
# Other	<u>0</u>
Total WM	<u>839</u>
Average WM Cost	<u>\$ 3,200</u>
Total WM Cost	<u>\$ 2,687,400</u>
2. Equipment Cost	<u>0</u>
3. Miscellaneous Cost	<u>\$ 73,700</u>
(Printing, Office Machinery)	
Total Cost Target	<u>\$ 2,761,100</u>

B. Feedback on Program Cost Target:

This cost target would reduce funding by \$597,000 from Level B. Funds would be cut from Phase II data collection for Wyoming State Office. Narrative would be the same as Level B, except for the following:

<u>STAFF</u>	<u>TASKS</u>	<u>WMS</u>	<u>DOLLARS</u>	<u>ACCOMPLISHMENTS</u>
Wyoming -- State Office	Collect survey & status data (Phase II) for 1,263 townships or 34% of total	77	\$ 246,400	- 34% of Wyoming's Townships having Phase II data
	- Oversee data collection	22	\$ 69,400	

FY 85 - LEVEL C

FY 85

Subactivity 4420

Project ALMRS

Date February 18, 1983

Page 1 of 1

Subactivity: Data Management - ALMRS

A. Cost Target Summary:

1. Work Months	
# Permanent	190
# Other	0
Total WM.	190
Average WM Cost	\$ 3,000
Total WM Cost	\$ 570,000
2. Equipment Cost	\$ 1,923,000
3. Telecommunications	\$ 382,000
Total Cost Target	\$ 2,875,000

B. Feedback on Program Cost Target:

This cost target would increase funding by \$259,000 from Level B, as \$338,000 of the \$597,000 increase would go to 4212 for data collection. Funds would be used to purchase Phase II equipment for Wyoming. Narrative would be the same as Level A and B, except for the following:

<u>STAFF</u>	<u>TASKS</u>	<u>WMS</u>	<u>DOLLARS</u>	<u>ACCOMPLISHMENTS</u>
D-200	<u>Equipment:</u>	0	\$ 1,923,000	- Phase II equipment obtained for Oregon, Utah and Wyoming
	- Procure equipment for Phase II for Oregon, Utah and Wyoming and for Phase III for NM & AZ			- Phase III equipment obtained for NM & AZ
	<u>Telecommunications:</u>	0	\$ 382,000	
	- Provide telecommunications support for Phase II & III in NM & AZ and Phase II in Oregon, Utah and Wyoming			

FY 85
Level C Narrative

FY 85
Subactivity 4212
Project ALMRS
Date February 18 1983
Page 1 of 1

Subactivity: Nonenergy Realty - ALMRS

A. Cost Target Summary:

1. Work Months	
# Permanent	1,132
# Other	0
Total WM	1,132
Average WM Cost	\$ 3,200
Total WM Cost	\$ 3,622,900
2. Equipment Cost	0
3. Miscellaneous Cost (Printing, Office Machinery)	\$ 73,700
Total Cost Target	\$ 3,696,600

B. Feedback on Program Cost Target:

This cost target would increase funding by \$338,000 from Level B, as \$259,000 of the \$597,000 increase would go to 4420 for purchase of equipment. Funds would be used to collect some Phase II data in Eastern States and to train Wyoming for use of Phase II. Narrative would be the same as Level B, except for the following:

<u>STAFF</u>	<u>TASKS</u>	<u>WMS</u>	<u>DOLLARS</u>	<u>ACCOMPLISHMENTS</u>
D-400	<u>Training (# trained):</u>	30	\$ 96,000	- New Mexico & Arizona trained for use of Phase III
	- Train New Mexico and Arizona for use of Phase III			- Oregon, Utah and Wyoming trained for use of Phase II
	- Train Oregon, Utah and Wyoming for use of Phase II			
Eastern States Office	<u>Townships:</u>			
	- Collect survey and status data for 638 townships containing public land surveys or 10% of total	78	\$ 250,400	- 10% of ESO townships having Phase II data
	- Oversee data collection (quality control)	25	\$ 78,600	



United States Department of the Interior

IN REPLY REFER TO
1275 (D-480)

BUREAU OF LAND MANAGEMENT
DENVER SERVICE CENTER
DENVER FEDERAL CENTER, BUILDING 30
DENVER, COLORADO 80225

MAR 15 1982

Memorandum

To: Director (101)

From: Service Center Director

Subject: An Automated Land and Mineral Record System

Enclosed is a proposal for implementation of an automated land and mineral record system for BLM in support of the oil and gas leasing program.

The proposal is designed around contract data collection and key entry with DSC staff providing systems analysis, design, programming, contract administration and training of state office staff.

State office staffs will be responsible for furnishing materials such as plats, HI's and serial register pages to the contractors and for data quality with the assistance of DSC staff.

There will not be a large amount of data collected in FY 82 because of the processing time necessary to award a contract. Beginning in the first quarter of FY 82, we will see a large impact on the DSC 66/80 computer which may require major off-loading of existing systems. We are exploring alternative solutions but are not prepared to make equipment recommendations at this time.

We are beginning data collection specification preparation and case management systems analysis and design immediately in anticipation of your approval.

This proposal is dependent upon the retention of the eight-person staff in Portland for at least the next 18 months. We are prepared to dedicate all necessary DSC capability in order to assure completion of our tasks.

For additional information, contact ~~Bob Arndorfer~~ (D-400), FTS 234-2239.

Enclosure



AN AUTOMATED LAND AND MINERAL RECORD SYSTEM
A PROPOSAL WITH INITIAL EMPHASIS ON THE OIL AND GAS PROGRAM

March 15, 1982

Bureau of Land Management
Denver Service Center

CONTENTS

	Page
I. EXECUTIVE SUMMARY	1
II. CURRENT SITUATION	1
A. Introduction	1
B. Manual Systems	2
C. Automated Systems	2
III. GOALS AND OBJECTIVES	3
A. Goals	3
B. Objectives	4
C. Assumptions	4
IV. DESCRIPTION OF THE LAND AND MINERAL SYSTEM	5
A. Introduction	5
B. Data Content	6
C. Data Entry and Edit Processes	6
D. Data Retrieval and Output Processes	6
V. PLAN FOR WORK	6
A. General Approach	6
B. Personnel Requirements	7
1. BLM State Office Requirements	7
2. Denver Service Center Requirements	7
3. Contractor Requirements	8
C. Proposed Work Components, Resources, and Schedule	8
1. Component 1 - Software Development	9
2. Component 2 - Land Survey Data Entry	10
3. Component 3 - Oil and Gas Lease and Application Data Entry	11
4. Component 4 - Current Status Data Entry	12
5. Summary of Component Workmonths and Costs by Fiscal Year	13
D. Future Outlook	13
VI. JUSTIFICATION	14
A. BLM Operating Benefits	14
B. Public Benefits	14
C. Other Agency Benefits	14
D. Benefit/Cost Analysis	15
Appendix 1	16
Appendix 2	17

I. EXECUTIVE SUMMARY

Increasing domestic production of energy and mineral resources is a high priority objective of the Department of the Interior. This paper proposes the continued development and implementation of an automated Land and Mineral System which, when implemented, will significantly increase the Department's ability to issue mineral leases and at the same time provide for a better base on which to institute sound management concepts and practices.

The proposed Land and Mineral System will contain three basic types of data: land survey description, current ownership (surface and mineral estate) and existing mineral leases and pending applications. With this data base in place, the Bureau will be able to triple its issuance of oil and gas leases with no increase of work force. Progress of actions on all pending cases will be immediately available. The system will be available to the new Mineral Management Service as well as other surface management agencies. The system can supplement or replace several existing automated systems presently in use throughout the government. Private industry and the using public will also have access to the valuable data base.

This proposal calls for a three-year implementation period at a total cost of 13.7 million dollars. Direct savings to the Bureau in the receiving and adjudication of oil and gas lease applications is conservatively estimated at 2.1 million per year. Additionally, the value to the public, due to faster issuance of leases, is estimated at 11 million dollars per year.

By implementing this proposed system, the Bureau would have a totally automated case management system which would produce an accurate and up-to-date picture of land status (ownership rights and authorized use). This data base forms the foundation for adding resource inventory and environmental data necessary to make informed land management decisions.

II. CURRENT SITUATION

A. Introduction

The present Land and Mineral System is comprised of many components or subsystems, both automated and manual. Information management problems and program efficiencies appear to be impaired by fragmentation.

Records of the Land and Mineral System are used by the land, mineral and other resource program managers of the Bureau of Land Management, other agencies (U.S. Geological Survey, Minerals Management Service, U.S. Forest Service, U.S. Fish and Wildlife Service) and the private sector.

These users are located nationwide, but up-to-date data is only available at BLM State Offices in manual format and by manual access methods.

Users are having difficulty in accessing and summarizing data by area, case type, and kind of action. Use of title rights and use authorization data (Status) for case processing by other resource programs require time-consuming manual searches of records.

B. Manual Systems

Current processing of land and mineral cases is now essentially limited to manual techniques. Legal criteria for the lands, application and applicants, are researched in the status records including:

- Chronological lists of cases and selected case actions by township
- A township plat which is an annotated composite of survey/title rights/use authorizations in graphic form
- Microfilm copies of case documents indexed by state and location data
- Abstracts of individual case data with chronological date/action entries

C. Automated Systems

Pressing needs have led to automation of segments of this system. These include the Simultaneous Oil and Gas System, the Lease Management Billing System, the Automated Coal Lease Data System, the Mining Claim Recordation System, the Declining Deposit Account and Receipt Validation Systems, the Alaska Automated Land Record System, and Withdrawal Review. These efforts meet specific needs; none meets the objectives of an integrated system. Few of these programs are compatible by reason of differences in data definition, computer equipment or software. These systems provide some definition of needs and are a source of some data for the proposed system.

There are currently two automated systems which provide a basis for much of the proposed system, a Land Survey Description and Status Record System (also known as the "Trial Project") and the Automated Digitizing System/Map Overlay Statistical System (ADS/MOSS).

A system for automation of land survey descriptions and land and mineral case abstracts of title rights and use authorizations (status) has been developed using data in the Lakeview area of Oregon. This operational survey and status system includes all case records currently affecting surface and subsurface title rights and land and mineral use authorizations in the project area. The system could be, but is not now, used for daily maintenance of the records by the State Office.

The Bureau's geographic information system, ADS/MOSS, can computerize maps including the Master Title Plat which is a graphic portrayal of land title/use authorization data. The ability of this system to selectively retrieve and display parts of maps and to overlay different map themes can become an important method of integrating title/use data and natural resource data. ADS/MOSS can operate on graphic computer terminals. This system is operational on Data General computers in several states, but it is not yet integrated with the land survey and status system.

Mathematical coordinates for locations of survey monuments of the Public Land Survey System will be assembled in a computerized data base. These data have several applications including control for geographic information systems, mapping and surveying by the Bureau, other agencies and the private sector.

The Bureau is now doing follow-up effort to the land survey and status system. A Detailed Requirements Definition (DRD) for automating case activity tracking and case processing in the areas of Lands, Minerals, and other programs is in progress. These requirements address (1) the daily maintenance of case activity data (records) and (2) the use of title and use authorization data to help process cases. This work is called Case Management and includes the pre-authorization and post-authorization case processing and activity tracking. The requirements for Lands, Minerals, and information needs defined for the Outer Continental Shelf management (called Offshore Analytical Resource System) and other activities have been defined by teams of experts but are not yet complete in all aspects. Definition of computer edits, data element correlation and commonalities of the various programs remains. System requirements and software design are scheduled for completion by October 1982.

III. GOALS AND OBJECTIVES

A. Goal

The goal of the Land and Mineral System, in accordance with the Department of the Interior's Management by Objectives (MBO) Program, is to improve services to the public and to provide more efficient processing of land and mineral cases by the Bureau of Land Management.

The specific Department MBO goals addressed are:

- Open Federal lands to public access for appropriate use or uses.
- Increase domestic production of energy and mineral resources.
- Establish and implement sound management concepts and practices.

B. Objectives

The objectives of an automated Land and Mineral System include:

- Provide faster processing of land and mineral cases with oil and gas cases having priority for initial data entry.
- Automate land survey description and political/administrative areas (eg., county, district, and if available oil and gas stipulation zones) for use in processing case files.
- Automate land title right and use-authorization case data (case and case action recordation) for use in case processing and program monitoring and reporting.
- Automate financial transaction data relating to case processing
- Improve the efficiency of the Bureau in processing cases through automation of elements of the adjudication process.
- Provide program/activity management information including workload and progress analyses, data summaries, lands open (or closed) to application by casetype, etc.
- Provide a base capability which could accommodate cases from other Bureau programs and activities in the future. Range, forestry, rights-of-way and other case types require similar tracking accounting and program management summaries as the initial land and minerals application.
- Provide current information on cases, to other parties at other locations involved in case processing and/or other programs and activities impacted by the authorization.

This Land and Mineral System serves to meet several objectives and tasks of the Assistant Secretary for Land and Water Resources as set forth in the MBO Program. Many of the Bureau's MBO Objectives-tasks-subtasks-actions-subactions are served by this Land and Mineral System.

C. Assumptions

- Bureau case workload in the lands and minerals program is increasing.
- Automation can make significant contribution toward the goal and objectives stated in the preceding sections.
- Restraints in Bureau workforce levels may necessitate contract work for the higher level of workforce needed for the initial entry of data.
- Assumptions about costs, work rates, etc., are detailed in the Plan for Work section and Appendix 1.

IV. DESCRIPTION OF THE LAND AND MINERAL SYSTEM

A. Introduction

The Land and Mineral System is comprised of land survey description, land and mineral title rights and use authorizations (land status records) and case activity tracking and processing combined into one automated data base and integrated set of functions. Status will include all of the surface and subsurface records data supporting the oil and gas leasing program. The capabilities discussed here will be implemented by the steps discussed in Section V, Plan for Work.

The system will replace the manual system with a streamlined combination of manual and automated steps. The initial automation functions to be implemented include:

- Receiving and screening of applications.
- Initiation of case files and tracking the case file location.
- Entry and maintenance of case data and actions into the automated status records.
- Tracking required payments and collections and providing receipts data to the accounting and fund control system.
- Reporting on program/activity workload, progress and problem areas. Providing fast multiple-location access to case and program data.
- Edits to provide valid and complete applications to adjudication personnel.
- Generation of adjudication aids.
- Relating the area of application to stipulations for the authorization.
- Provide data to the Simultaneous Oil and Gas lease list.
- Calculate billing amounts by case.

The automated and streamlined system will enhance the character of clerical and professional positions operating and using the system. Some retraining will be necessary to use computer terminals and the automated system. The productivity of employees and other records users will be increased and case processing times decreased.

The Land and Mineral System will utilize computer terminals at user locations for data entry, data manipulation and output. Terminal access can be arranged for the Minerals Management Service, U.S. Geological Survey, and other surface management agencies. Procedures for using the system must be kept easy-to-use for employees, the public (output only), and other agency users. Data maintenance and use will be from state, district and resource area office terminals with retrieval and output at these locations and at Headquarters.

B. Data Content

Land survey description data is the standard basis for identifying lands covered by title and use authorization documents. Case activity (actions-dates-who-office) data can also be stored in automated form for case and program situation processing. Payment requirements and collections data will be needed to assess satisfaction of specific case requirements. Data elements for financial aspects of case activity are being prepared. An automated interface to the Accounting and Fund Control System will be developed that will save both time and work effort over present manual methods.

C. Data Entry and Edit Processes

Data entry involves two kinds of work. First is the initial data loading which involves a heavy up-front effort and cost; these activities are discussed in the Plan for Work section. Second, continuing case activity will require day-to-day data maintenance by field office personnel. Both the initial data load and daily maintenance entries must be edited against valid codes and logical criteria to minimize/eliminate errors.

D. Data Retrieval and Output Processes

Rapid retrieval of current data from multiple locations is paramount. Retrieval of data by case, by location, and by program/activity, etc., will be done in an instantaneous to overnight timeframes depending upon scope and complexity, and the user in question.

Output formats will vary by kind of retrieval and type of equipment at a retrieval site. Computer video screen terminals, either alone or in conjunction with printing terminals, can be used for many outputs like case abstracts, (serial register pages), etc., and for special program reports or the public land statistics tables. Later system components may display title/use data, alone or in combination with natural resource data, as maps and overlays on graphics terminals at field user sites.

V. PLAN FOR WORK

A. General Approach

This plan of work resulted from examining the needs and prioritizing work on various components. The high work force levels needed for initial data entry requires the use of contractor work force as an alternative to support BLM personnel. Availability of skilled contractor and/or government personnel may be a problem.

Areas and rates of implementation alternatives have also been considered in assembling this plan. The first set of six BLM administrative states covers twenty-three geographic states. These states contain a large proportion of the Bureau's oil and gas case activity. Five administrative states with seven geographic states are in a second set where data entry will begin in FY 1984. This area division is also selected as setting a work rate at the present work force capacity of the Bureau to administer and do tasks which must be done by Bureau personnel.

It is essential that State Offices participate in this project. The source data is located at the State Office. Their contributions to requirements, data assembly and verification will ensure their feeling of "ownership" and familiarize them with the automated data system.

Concerns about the capacity of the Bureau's computer equipment have been raised during preparation of this plan. Appropriate relative use levels for the Bureau's central computer in Denver, computers at State Offices, and telecommunications have been discussed as well as the possible limits to the capacity of these existing computers. Some additional terminals and data storage devices are included. A study of this issue has been initiated.

B. Personnel Requirements

This plan identifies State Office, Service Center and contractor work force levels. The Bureau work force levels have been held to the minimum necessary to produce quality products identified in each of four work components.

1. BLM State Office Requirements

The workmonths for each state shown on tables 1 through 4 are the minimum necessary to:

- a) provide source data to contractor(s) for abstracting and
- b) ensure that data received from contractor(s) meets minimum acceptable levels of accuracy.

The variety of skills necessary for this work will come from people experienced with land records and land and minerals adjudication.

2. Denver Service Center Requirements

The mix of skills to implement this plan will come from two divisions within the Service Center.

- a) Division of Computer Application (D-210)
Systems analysts and computer programmers from the Land Records and Energy and Minerals Teams will be needed to complete work on system design and software development and to assist with field implementation.

b) Division of Lands and Minerals System (D-480)
Personnel from the new Branch of Land Record Services will be assigned full time to this project. This includes user representatives with expertise in land records and case management activities, and eight records abstractors/inspectors in Portland, Oregon. This branch will:

- Define requirements with assistance by State and Headquarters Offices.
- Participate in system design.
- Prepare and administer data abstracting and key entry contracts.
- Perform training and assist states in assembling data, data verification and system implementation with initial operations.
- Do some initial work in data abstraction and entry, especially where this involves extracting data from other automated systems.

3. Contractor Requirements

The majority of data abstracting and key entry will be performed under contract. It is assumed that contract(s) for abstracting survey data, lease and application data, and current status will be awarded before the end of FY 1982.

C. Proposed Work Components, Resources and Schedule

The plan of work is arranged in logical steps to bring the system on-line as an operating automated record keeping and case management processing system.

1. Component 1 - Software Development

The first component is the development of a case management capability which is a follow-up to the current automated land survey and status (Trial Project) system. The product is a system which will automate elements and aids the adjudication of cases. System development steps are shown in Table 1. This includes addition of financial data elements. Survey and status data will be needed for use of this software.

Table 1. Land and Mineral System Case Management Software Development

TASK	Dates		BLM Workmonths			Total Cost 1/
	Start	End	State	DSC	Total	
Detailed Requirements Definition	ongoing	6/82	5	14	19	57,000
System Design	3/82	9/82	5	19	24	72,000
Systems Development	6/82	4/83	3	62	65	195,000
Test and Integration	2/83	7/83	10	16	26	78,000
System Implementation (with continuing operation)						
Oregon	4/83	-				
New Mexico	5/83	-				
California	6/83	-				
Eastern States	7/83	-				
Montana	8/83	-				
Colorado	9/83	-				
Total			23	111	134	402,000

1/ Cost of BLM personnel estimated at \$3,000/workmonth

2. Component 2 - Land Survey Data Entry

The second component is the assembly and entry of land survey description data. The product is an edited land survey data base. The land survey description data provides the base for all land and mineral actions. All leasing and case activity is on specified legal land description using the survey terminology. Details of this work are shown in Table 2.

Table 2. Land Survey Description and Admin/Political Area Data Entry

State	No. of Twps. 4/	Dates		BLM Workmonths			Costs in \$1,000		Total Cost 1/
		Start	End	St.	DSC	Total	Contr. Cost Abstr. Data	Key Entry	
Ore. 5/	5,034	ongoing	4/82	Work	Completed		-	-	-
N. Mex. 6/	4,608	10/81	6/82	20	8	28	-	50	134
ESO 2/	7,500	5/82	9/83	47	16	63	170	50	409
Calif. 2/	1,500	4/82	9/82	9	37	46	-	10	146
Mont 7/	4,789	8/82	1/83	40	10	50	108	30	288
Colo.	3,177	12/82	5/83	20	8	28	72	20	176
Total	26,608			136	79	215	350	160	1,153 3/

1/ Includes cost of BLM personnel at \$3,000/workmonth

2/ Includes only townships with oil and gas leases and applications

3/ Cost per township, \$54

4/ Includes only townships to be entered in the initial FY82-FY83 effort

5/ Oregon includes Washington

6/ New Mexico includes townships in Oklahoma and Texas

7/ Montana includes townships with oil and gas cases in North and South Dakota

3. Component 3 - Oil and Gas Lease and Application Data Entry

The third component is collection and entry of oil and gas lease and application case data. The product is a current oil and gas case data file. This process entails extracting name, address and serial number data from the existing Lease Management System, assembling serial register pages for these serial numbers and abstracting and entering the case data. Data for oil and gas applications will also be taken from serial register pages. Table 3 itemizes this process.

Table 3. Oil and Gas Lease and Application Data Entry

							Costs in \$1,000		
State	No. of O & G Cases	Dates		BLM Workmonths			Contr. Cost		Total Cost <u>1/</u>
		Start	End	St.	DSC	Total	Abstr. Data	Key Entry	
Ore. <u>4/</u>	<u>3/</u> 3,951	ongoing	6/82	6	3	9	-	-	27
N. Mex. <u>5/</u>	29,264	6/82	2/83	14	6	20	55	23	138
ESO	14,029	1/83	6/83	7	3	10	26	11	67
Calif.	3,354	10/82	3/83	3	3	6	6	3	27
Mont. <u>6/</u>	26,305	1/83	7/83	13	5	18	49	21	124
Colo.	9,914	4/83	9/83	5	3	8	19	8	51
Total	86,817			48	23	71	155	66	434 <u>2/</u>

1/ Includes cost of BLM personnel at \$3,000/workmonth

2/ Cost per case, \$5.00

3/ The number of cases is from a 9/30/81 memo from U.S Geological Survey and W.O. Inst. Memo 82-277, 2/24/82

4/ Oregon includes Washington

5/ New Mexico includes cases in Oklahoma and Texas

6/ Montana includes in North and South Dakota

4. Component 4 - Current Status Data Entry

The fourth component of this project is the assembly of source data, abstracting and entry of current status data on townships involved in oil and gas activity. The product is a status data base which can be used with survey and case data to produce adjudication aids and products. This data is obtained by abstracting land records for case data currently affecting title rights and use authorizations. This step is absolutely essential to automation of the adjudication function. Table 4 details this work.

Table 4. Current Status Data Entry for Oil and Gas Areas

State	No. of O & G Twps.	Dates		BLM Workmonths			Costs in \$1,000		
		Start	End	St.	DSC	Total	Contr. Cost		Total Cost <u>1/</u>
							Abstr. Data	Key Entry	
Ore. <u>2/</u>	2,000	7/82	8/83	68	14	82	180	62	488
N. Mex. <u>3/</u>	3,000	3/83	3/84	102	21	123	270	94	733
ESO <u>4/</u>	7,500	7/83	9/84	255	52	307	675	234	1,830
Calif.	1,500	4/83	4/85	51	10	61	135	47	365
Mont. <u>5/</u>	4,789	8/83	8/84	163	33	196	431	150	1,169
Colo.	2,000	10/83	9/84	68	14	82	180	62	488
Total <u>7/</u>	20,789			707	144	851	1,871	649	5,073 <u>6/</u>

1/ Includes cost of BLM personnel at \$3,000/workmonth

2/ Oregon includes Washington

3/ New Mexico includes Oklahoma and Texas

4/ ESO current status area includes lands applied for or currently under lease, plus public domain and acquired land and patented lands with mineral reservations to the United States.

5/ Montana includes North and South Dakota

6/ Cost per township, \$244

7/ These six states include 20,789 townships of a lower 48-state total of 31,389 townships; oil and gas townships in the remaining five state offices are included in Table 5.

5. Summary of Component Workmonths and Costs by Fiscal Year

Table 5 summarizes the total resources and costs of the first four components by fiscal year. Tables 2 through 4 are for the six priority states as identified by the Minerals staff of the Headquarters Office. Table 5 also includes an additional 5 state offices in FY 1984.

Table 5. Project Summary, Oil and Gas Areas of the Automated Land and Mineral Record System

Fiscal Year	Workmonths			1/ Travel Cost	Costs in \$1,000				
					BLM WM	Procurement		Equip.	Total
	States	DSC	Total			Abstr.	Key Entry		
1982	94	82	176	51	528	513	225	-	1,266
1983	328	125	503	94	1,509	1,863	650	508	4,530
1984	479	98	577	115	1,731	3/	3/	-	1,731
1985	13	2	15	-	45	3/	3/	-	45
Subtot.	914	357	1,271	260	3,813	2,376	875	508	7,572
Outyr. Costs <u>2/</u>	840	289	1,129	250	3,387	2,237	767	-	6,391
Total	1,754	646	2,400	510	7,200	4,613	1,642	508	13,963

1/ Travel is critical and so it is identified as a separate issue for ceiling consideration.

Assumption: 1 week of travel per state per month plus initial training 6 travel week/state/component (survey, oil and gas, current status)

2/ Do five states, estimated here using average costs.

Arizona	3,472 twps	Survey data	\$54/twp (Tbl. 2)
Utah	2,589 twps	Status data	\$244/twp (Tbl. 4)
Wyoming	7,845 (inc. KS, NE)	Oil and gas data	\$12/twp
Idaho	2,546 twps		\$310/twp
Nevada	3,369 twps		
Total	19,821 twps @ \$310/twp = \$6,391,000		

(FY 85 \$3,391,000 FY 86 \$3,000,000)

3/ FY 83 Contract obligation covers contract work to be performed in FY 84 and 85.

D. Future Outlook

Two components to this system are not developed in Fiscal Years 1982-1984, but have significant benefit potential.

Computerized map graphics can include the survey parcel map and Master Title Plat showing the location of status cases can be automated with a geographic information system. The Bureau's Automated Digitizing System/Map Overlay Statistical System may be integrated with the alphanumeric data system later. This would permit graphic display of selective retrievals of survey and status data. A geographic information system is an important tool for integrating title, use authorization and natural resource information.

A supporting component to this graphics capability is a computerized file of coordinate position data. The Public Land Survey System can generate files of this coordinate data. These files can serve as control data for the geographic information system.

VI. JUSTIFICATION

The savings to be achieved by the implementation of the Land and Mineral System are significant. Listed below are a few examples of these savings for BLM, the public, and other agencies.

A. BLM Operating Benefits

- Shorten time required to receive a case file
- Eliminate duplications in processing
- Expedite case processing
- Automate management reports and statistics
- Faster dissemination of current information
- Increase the accuracy of information
- Increase case throughput with existing work force

B. Public Benefits

- Faster retrieval of information - \$50 per hour saved
- Reduction of duplicate filings on the same parcel of land - \$25 per application
- Issue leases in a shorter time frame - \$100 per lease
- Make current information available via terminals at many locations

C. Other Agency Benefits

- Access and use of the BLM's Data Base Information (MMS, USFS, etc.)
- Update of known geological areas directly by USGS
- Provide faster response time for accessing BLM information
- Eliminate duplicate record keeping systems

D. Benefit/Cost Analysis

The Proposed Land and Mineral System is assumed to have a functional life of 30 years. Although analyses over such a time period are tenuous, it is unlikely that either the leasing function or its attendant land status recording, will change significantly.

In keeping with conservative estimates, no benefits were accrued before the project was fully operational and worst case operating costs were used. The basis for Bureau benefits is 68 minutes (\$19.65/case) saved per case processed. This results in a savings to the Bureau of \$2.162 million per year over 110,000 cases. The basis for public benefit is a \$100 value per case achieved by faster processing and earlier use authorization. The \$100/case is a conservative value for one week of time savings. Given an estimated 110,000 cases per year, the undiscounted yearly benefit would be \$11.0 million. Cost and estimates of benefit data are itemized in Appendix 2.

An extensive benefit cost analysis was run using a discount rate of 12%. This rate reflects our estimate of both inflation and the cost of money. The results of the analysis are:

The gross benefit cost ratio is 5.71 which means that using the present value of both costs and benefits, each dollar spent should yield \$5.71 of benefits.

The net annualized benefits came to 8.76 million dollars. This means that if we took the total net benefits of the project and divided them into equal segments over the life of the project, each year's benefit would be 8.76 million in present value.

The internal rate of return of the project is 65.6% which is the rate at which both cost and benefit streams are equal; this means that if we had to choose any other project to do the same tasks it would have to yield an internal rate of return higher than 65.6%

APPENDIX 1*

Basic assumptions about time per activity per township are itemized here for Tables 2 through 4. Some of the data in these tables is modified from the figures below due to work-in-progress and for extra work in the Eastern States where improved records products (Master Title Plat, Historical Index, etc.) are not available.

Table 2. Land Survey Description and Admin/Political Area Data Entry

Basic Assumptions: Time per activity per township

<u>By</u>	<u>Activity</u>	<u>All Twps in St. Rate</u>	<u>O & G Twps Only Rate</u>
SO	Source Data Prep.	3.0 min/twp	5.0 min/twp
	Data Verification	40.0 min/twp	60.0 min/twp
SC	Quality Control	42.0 min/twp	45.0 min/twp
	Edit Verify	20.0 min/twp	30.0 min/twp
Cont.	Abstract Data	90.0 min/twp	90.0 min/twp
	Key Entry	30.0 min/twp	30.0 min/twp
	Total	225.0 min/twp	260.0 min/twp

Table 3. Oil and Gas Lease and Application Data Entry

Basic Assumptions: Time per activity per township

<u>By</u>	<u>Activity</u>	<u>O & G Applications</u>	<u>O & G Leases</u>
SO	Source Data Prep.	2.0 min/appln	3.0 min/lease
	Data Verification	2.2 min/appln	2.2 min/lease
SC	Quality Control	1.1 min/appln	1.1 min/lease
	Edit Verify	1.1 min/appln	1.1 min/lease
Cont.	Abstract Data	5.5 min/appln	7.5 min/lease
	Key Entry	2.7 min/appln	3.8 min/lease
	Total	14.6 min/appln	18.7 min/lease

Table 4. Current Status Data Entry for Oil and Gas Areas

Basic Assumptions: Time per activity per township

<u>By</u>	<u>Activity</u>	<u>Current Status (any twp)</u>
SO	Source Data Preparation	155.0 min/twp
	Data Verification	198.0 min/twp
SC	Quality Control	50.0 min/twp
	Edit Verify	22.0 min/twp
Cont.	Abstract Data	360.0 min/twp
	Key Entry	150.0 min/twp
	Total	935.0 min/twp

Cost Assumptions, Tables 2 through 4.

BLM Personnel Cost \$3,000/workmonth (includes extra travel cost).

Contractors: Abstract Data \$120/day

Key Entry \$100/day

* Revised 3/17/82

APPENDIX 2

Annual costs and benefits, both Bureau and public, are itemized and benefit results are detailed below.

Undiscounted Amounts in Millions of Dollars

<u>Year</u>	<u>Capital Costs</u>	<u>Operating Costs</u>	<u>Benefits</u>
1	1.266	.0	.0
2	4.53	.0	.0
3	1.731	.0	.0
4	3.436	.0	7.162
5	3.000	.5	13.162
6	.0	.5	13.162
7	.0	.5	13.162
8	.0	.5	13.162
9	.0	.5	13.162
10	.0	.5	13.162
11	.0	.5	13.162
12	.0	.5	13.162
13	.0	.5	13.162
14	.0	.5	13.162
15	.0	.5	13.162
16	.0	.5	13.162
17	.0	.5	13.162
18	.0	.5	13.162
19	.0	.5	13.162
20	.0	.5	13.162
21	.0	.5	13.162
22	.0	.5	13.162
23	.0	.5	13.162
24	.0	.5	13.162
25	.0	.5	13.162
26	.0	.5	13.162
27	.0	.5	13.162
28	.0	.5	13.162
29	.0	.5	13.162
30	<u>.0</u>	<u>.5</u>	<u>13.162</u>
Totals	13.963	13.0	349.374

Using a discount rate of 12 percent,

Discounted Capital Costs = 9.86

Discounted Operating Costs = 2.51

Discounted Benefits = 70.60

The Gross Benefit/Cost Ratio = 5.71

The Net Benefit/Cost Ratio = 6.91

The Net Benefits = 58.23

The Annual Net Benefits = 8.76

The Internal Rate of Return = 65.6 percent

Appendix 9
Recommendations of Lands Records
Task Force
April 6, 1982



United States Department of the Interior

BUREAU OF LAND MANAGEMENT
COLORADO STATE OFFICE
1037 20th STREET
DENVER, CO 80202

IN REPLY REFER

CO-910
1270.1

April 6, 1982

Memorandum

To: Director (102)

From: Associate State Director, Colorado

Subject: Recommendations of Lands Records Task Force

In response to the direction in the March 2 memorandum from Dave Tidwell, the Lands Records Task Force met in Denver on April 1 and 2 and developed the following recommendations:

A. Records

1. By June 1, 1982, implement an automated system for case recordation, receipt validation and accounting, and generating statistical data on new cases. The system will apply to all new applications filed in BLM State Offices—in lieu of existing manual recordations processes. Responsible official to issue implementing instructions is Director, DSC.

2. By August 31, 1982, State Directors should complete abstracting and data entry from all existing oil and gas lease applications and all new cases received after that date. If states have all or part of pending applications or leases in alternative automated systems, the data must be converted to the central system by August 31, 1982. The data captured in this system will be used for automated case tracking and management. Responsible official to prepare implementing instructions is Director (530). *NO 10/10/82*

3. Beginning September 1, 1982, State Directors should start abstracting and data entry from existing oil and gas leases. The ideal goal is to complete data capture for an automated lease management system by December 31, 1982. This is a very ambitious goal and may, in fact, be unattainable in most states. Alternative priority definitions and funding strategies will be required to get the job done. Responsible official to prepare implementing instructions is Director (530).

4. By June 1, 1982, the State Director, Alaska, should implement the systems and procedures described in 1, 2, and 3 above using existing Alaska capability. Responsible official to prepare implementing instructions is Director (530).

5. By May 10, 1982, develop alternative funding levels for FYs 82, 83, and 84 to implement the March 15, 1982 Automated Lands and Minerals Records System Proposal prepared by DSC. Responsible official to prepare package is Director (160) with participation by Directors (320) and (530) and DSC (D-400). PEOPLE, LANDS, MINERALS, ENVIRONMENT

6. By June 1, 1982, promulgate appropriate regulations to recognize the new automated system as a part of the official record system for BLM. Responsible official to prepare regulations is Director (320).

7. By April 30, 1982, Director, ESO, submit an updated plan for restoring, preserving, and improving the Eastern records system. The plan should specifically address needs for funding and personnel to complete this work. Responsible official to issue implementing instructions is Director (530).

8. By June 2, 1982, develop and issue a State by State action plan for records improvement in the Western States. This should be the principal product of the records workshop scheduled to convene on May 17, 1982. Immediate emphasis should be on preservation of existing records. Alternatives to traditional plat drafting procedures should be explored and strategies recommended. Responsible official to issue implementing instructions is Director, DSC (D-200).

9. Immediately, recognize that any FTE flexibility gained through automation of oil and gas leasing and records systems will be required to implement the recommendations described above. Records and case management backlog problems can be attributed in large part to use of personnel assigned to those responsibilities actually being required to meet the workload demands of operating the SIMO and records program manually. Responsible official to issue implementing instructions is Director (530).

3. Personnel

1. By April 9, 1982, transmit copies of New Mexico and Montana Lands and Minerals organization structures, functional statements, and position descriptions to all State Directors. Instruct State Directors to begin drafting job descriptions for Lands and Minerals Operations jobs. Responsible official to issue instruction is Director, DSC.

2. By May 7, 1982, issue an interim classification guide and by June 4, 1982, issue a final classification guide for Lands and Minerals Operations job descriptions. Instruct State Directors to use classification guide to complete and classify new job descriptions for Lands and Minerals Operations employees. Responsible official to issue instruction is Director, DSC.

3. By April 15, 1982, issue a memo establishing a task force on Lands and Minerals Operations job enrichment. The memo should schedule workshops beginning June 1, 1982, and ending September 30, 1982. The goal of the task force should be to attract and retain qualified personnel in the Lands and Minerals Organization through job enrichment. A corollary to job enrichment is to recognize and acknowledge placement realities of necessarily routine tasks. Responsible official to issue implementing instructions is Director DSC.

4. Beginning May 15, 1982, State Directors should submit plans for implementing effective management techniques to achieve higher levels of morale among lands and minerals operations personnel. Organizational development, team building, participative management, training, orientation, and other techniques should be utilized to supplement the job enrichment and recognition strategies described in 1 through 3 above. Responsible official to issue implementing instructions is Director (320).

5. Beginning October 1, 1982, the results of the Job Enrichment Task Force should be used by State Directors for improving position descriptions, classification guidance, and career building strategies for Lands and Minerals Operations personnel. Responsible official to issue implementing instructions is Director (DSC).

6. By September 30, 1983, complete a follow-up evaluation of the oil and gas program to measure changes resulting from the FY 82 evaluation and these recommendations. Responsible official to issue implementing instructions is Director (860).

Members of the task force that developed these recommendations were:

Bob Moore, Associate State Director, Colorado, Chairman
 Monte Jordan, Special Assistant to DDE&M Resources, W.O.
 Jeff Steele, Division of Lands, W.O.
 Dan Patton, Acting Chief, Division of Oil & Gas, W.O.
 Jesse Felix, Division of Information Systems, W.O.
 John Lloyd, Division of Evaluation, W.O.
 Bob Arndorfer, Assistant Director, DSC
 Tony Alcon, Division of Records Systems, DSC
 Alvah Whittedge, Branch of Lands & Minerals Operations, Colorado

As its final act, the task force dissolved itself on April 2, 1982.

Bob Moore

Appendix 10
Trial Project Final Report
May 21, 1982

THANK

IN REPLY REFER TO

United States Department of the Interior

1275 (B-480)

BUREAU OF LAND MANAGEMENT

DENVER SERVICE CENTER

DENVER FEDERAL CENTER, BUILDING 50

DENVER, COLORADO 80225

Memorandum

MAY 21 1982

To: Director (870)
From: Service Center Director_____
Subject: Land Status Records Automation

A proposal for an "Automated Land and Mineral Record System" was made by the Service Center in a March 15, 1982 Memorandum to Director (101). A report on the Trial Project was requested prior to pursuit of the proposal.

Service Center personnel who worked on the Trial Project are now assigned to other work. Trial Project people have been assigned to Lands and Minerals Systems (D-480) and the Land Records Team (D-224) and the Data Base Team (D-229), most are working on a new Land and Mineral Data Entry System.

All of the questions raised in your request have been addressed in the attached report except the amount of computer data storage requirement. This issue has been addressed in an April 27, 1982 Memorandum to Chief, Division of Information Systems from ASCD, Data Systems, 1260 (D-220), subject "Review of DPP 83-3".

1 Enclosure:

Encl. 1 - "The Trial Project and Transition to a Bureauwide Automated Land and Mineral Record System", May 18, 1982, including Tables 1 and 2.

cc: WO-530

THE TRIAL PROJECT AND TRANSITION
TO A BUREAUWIDE AUTOMATED LAND AND MINERAL RECORD SYSTEM
May 18, 1982 1/

I. EXECUTIVE SUMMARY

A. This report describes the 1977 origins of the Trial Project, including its purpose, objectives and planned end products. The results and the lessons learned have implications for future information systems.

The information system concepts developed and demonstrated by the Trial Project for land title right and use authorization (status) information have direct impact upon Administration programs to enhance Federal land and mineral management. Transition of the Trial Project to a National land and mineral record system can help meet several Administration goals and objectives.

The Trial Project culminated in a March 15, 1982 proposal 2/ for automation of Bureau of Land Management status records. The Trial provides proven capabilities for an automated records system, and production of several report products.

Acceleration of status case processing through use of automated land status data can facilitate application case management prior to and after an authorization is issued.

Case management, pre and post-authorization case processing, can be accelerated by both rapid access to relevant status data at appropriate locations and by computer processing of land status data. Automated status data is a prerequisite to producing automated case adjudication outputs although the latter is not part of the Trial Project.

The discounted present value of costs and benefits for an Automated Land Status Records System were estimated for 7 years for the oil and gas program and found to be 10.62 and 24.64 million dollars respectively using data from the March 15 paper. The costs and benefits will increase for doing all case types, withdrawals, rights-of-way, coal and others because area coverage would increase. Increases in benefits and economies of scale for cost items indicate potential for an even more favorable cost/benefit ratio.

I. STATUS OF THE TRIAL PROJECT

A. Purpose and Objectives

The purpose of the Trial Project is to define, develop and test automated processes that will support the recording, retrieval and display of data using land status, land survey description and administrative/political area data to test concepts in the Strategic Plan.

- 1/ Denver Service Center (D-480) response to Headquarters (W0-870) Inquiry about Land Status Records Automation and the "Trial Project."
- 2/ "An Automated Land and Mineral Record System, A Proposal with Initial Emphasis on the Oil and Gas Program", Bureau of Land Management, Denver Service Center, Transmitted to Director (101) from the Service Center Director by Memorandum March 15, 1982.

The project objectives are to test alternative processes, methods and techniques for data base management, graphics, telecommunications, the user-to-system interface, and to establish design criteria for BLM information systems for land and survey records. The end products are to include tested computer software modules, system documentation, and an operating interactive system.

The 1977 definition of the Project designated seventy-one townships in the Lakeview District in Oregon as the test data area.

B. Description of the Project

The land status records to be automated consist of data from files, land office plats, tract books, and for cases after 1908, Serial Register Pages which summarize case data including location and actions. The "new" records installed after 1956 by the Records Improvement Project (RIP) added Master Title Plats, Use Authorization Plats and a Historical Index.

The project plan called for automation of alphanumeric data and automation of the plats with a geographic information system in an integrated data base. Field users are to have interactive access to the data on terminal screens alphanumeric and graphics, printing terminals, line printers and plotters.

C. Trial Project Accomplishments

1. Data Entry

Several data entry methods for land description, administrative and political area and land status data were tested and effective, efficient methods were developed. These methods include batch processes for the initial conversion and entry of data and interactive techniques for data maintenance. Some modifications of survey data entry may be required in the Eastern States Area.

Data bases for alphanumeric data have been designed and used for storage of data in the Lakeview Trial area. All seventy-one townships of survey description and one township of status data have been loaded to the Honeywell 66/80 data base.

The choice of alphanumeric data entry method depends upon the available personnel and their skill level, equipment and time. Entry of land survey description and administrative/political area data preceeds status data entry for efficiency, status data editing benefits and increased utility of a complete and accurate data base.

Entry of map data into a geographic information system uses the Bureau Automatic Digitizing System (ADS). This graphics system is operational but not integrated with the alphanumeric data. The integration of the alphanumeric land status data and geographic position data was deferred. A team from the Service Center is now exploring methods for capturing geographic coordination values for Public Land Survey. Once a decision is made on this issue integration will be possible.

2. Outputs Produced

Seven land description reports have been developed. These reports permit retrieval of survey data by type of survey, user designated section and acreage summaries by agency of any one of several administrative or political areas.

Seven land status reports have also been implemented. These include; a Case Abstract, Status for a Designated Land Parcel, the Historical Index, and four case indexes (location, case type, serial number and proprietor name).

The geographic (map) data is automated for manipulation and output by ADS or the Map Overlay Statistical System (MOSS). Map data can be displayed on a graphics terminal screen or a line plotter.

Since the alphanumeric and graphics data are on different computers, integrated retrieval and use of all the data to produce outputs is not yet possible.

3. Project Documentation

Extensive documentation of survey and status data entry procedures has been prepared. Documentation of completed computer programs is also written. A Users Manual has been drafted. The Data Element Dictionary thoroughly defines the data and the valid data entries in each data element.

4. Data Maintenance

Procedures for interactive terminal update have been developed for land survey description and administrative/political area data. Batch processes are also available for correction or addition of data.

Status data maintenance procedures utilize interactive terminal screens, development was terminated in April 1982.

5. Data Base Management System

The data base for survey and administrative/political data is fully developed and operational. The status data base was being tested in April 1982 with one township of data (other data is ready).

Transition to a Bureauwide system will require addition of a few data elements related to case receiving (time stamp data, receipt number, fund symbol, etc.).

6. Processing

Timesharing was used for interactive processing of Trial Project Data, a change to Transaction Processing is now being implemented. This requires modification of many operational programs. Transaction Processing is being adopted to permit immediate updating of the data base.

7. System Testing

Testing for land description data is complete including data entry and editing, data base and output production.

Testing for land status processing was underway in April 1982. The total system should be tested with larger volumes of data.

III. TRANSITION FROM TRIAL PROJECT TO BUREAUWIDE SYSTEM

A. Development Effort - - -

A strategic Plan for Information System Management delineated several application Packages including Land REcords Management, Case Management, Utilization Management and Accounting and Fund Control. The 1977 origins of the Trial identified only the Land Records for development because of the diversity of program area covered by the other applications. The present Trial Project capabilities can accomodate most case and utilization management data updates with minor exceptions in case receiving and accounting.

The March 1982 proposal for "An Automated Land and Mineral Record System" included software development to add case processing capabilities thereby integrating the case and utilization management application packages (pre and post-authorization case processing). Recently defined requirements by the oil and gas program have added case receiving and accounting data elements.

The development effort now encompasses several application packages with the Trial Project concepts providing the basis for transition to the Bureauwide system.

B. Transition Phase I, Interim Land and Mineral Case Data Entry

Automated recordation of case data from all new applications for all new cases received after June 1, 1982 in all states except Alaska is now being developed. The emphasis is on oil and gas cases. Data will also be entered by the states for all existing-oil and gas leases and all pending oil and gas applications. The Trial Project is providing the basis for this new development.

C. Transition Phase II, The Automated Land and Mineral Record System

Phase II would continue the transition of the Trial Project. Phase I does not include a comprehensive land description data base of individual areas, acreages or administrative/political area data although this data is available at the section level in a geographic reference table. Land description data is necessary to edit areas in all status cases and associate acreage data to all parcels in status cases. Phase II involves use of land description data in essentially the same manner as the Trial.

Phase I is making a transition to transaction processing from timesharing processing. The Trial Project land description and land status programs will also have to be converted to transaction processing for Phase II. Automation in Phases I and Phase II to utilize data entry procedures and elements of system design slightly modified from the Trial Project.

Phase II will require development of additional case processing software for production of automated adjudication aids thereby implementing the case and utilization management packages of the Strategic Plan for land records and the land and minerals program.

Implementation of the Automated Land and Mineral Records System requires automation of existing status records, a large task. Bureau or contract work will be necessary for the essential conversion of land description and case records. The attached Table 1 itemizes numbers of townships and some variables by State Office for setting a priority sequence for this data entry. This data entry can be sequenced by state and/or by management, withdrawal review, wilderness study area and others) Table 2 provides some work force and cost estimates by State Office for such data conversion work. Entry of land description data preceeds status and provides both status case edit criteria and the basis for comparing different cases.

Resources for conversion of land survey description and land status records data from manual to automated form is summarized from Table 2.

	Oil and Gas Area (31,389 Townships)		All Public Land Survey Area in the "Lower 48" (69,885 Townships)	
	Workmonths	Cost (1,000s)	Workmonths	Cost (1,000s)
Land Description	965	\$2,689	2,275	\$6,357
Land Status	2,917	7,988	6,876	18,829

Resources for development of case management software for minerals and conversion of the Trial Project into a Bureauwide system were estimated to be 134 workmonths and \$402,000 in the previously cited March 15th paper.

Maintenance of land records, considering only case receiving and recording of alphanumeric data, with the automated system is estimated to be approximately one-eighth of the time required for the current manual processes.

The geographic information system for entering and retrieving the Master Title Plat and other graphics data will require system integration. No cost or workforce estimates are available for inclusion at this time. The Public Land Survey System (PLSS) is proposed to develop coordinate control data to support this graphics component of land status records.

Additional computer facilities will be required in the Service Center, State and other Field Offices for implementation of Phase II. This equipment is described in a Service Center Memorandum to the Chief, Division of Information Systems (WO-870) from Assistant Service Center Director, Data Systems (D-200), 1260 (D-220) April 27, 1982.

Alaska is now operating an automated land records system which is meeting current needs. Their remote location and their having a functioning system suggest they not be included at this time. The Alaska system is not suitable for operation on the large data volumes in the "lower 48" or on the Honeywell 66/80 without major effort and cost. Concepts and techniques of both the Trial Project and the Alaska system will be used in implementing Phase II.

IV. CONCLUSION

The Bureau geographic information system (graphics) has not yet been integrated with the alphanumeric land records data by the Trial Project.

The Trial Project is providing fundamental new knowledge about implementation of an Automated Land and Mineral Record System and about information system applications in the Bureau.

The needs for land records and case and utilization management in several areas, energy and minerals, lands and other resource management areas can utilize the Trial experience to make the transition to a Bureauwide system. The concepts of the Strategic Plan and the Trial Project about interactive data use by the field have been demonstrated to be valid and are to be applicable on a large scale.

TABLE 1 OIL AND GAS AND TOTAL AREA DATA FOR SURVEY, OIL AND GAS CASES AND OTHER STATUS

May 10, 1982

ADMIN/GOV ST GO STATE	SURVEY		TOWNSHIPS		OIL AND GAS CASES		OTHER STATUS	
	Twp Eqv 1/112	Area, Number of Survey Twp Eqv 1/112	Number of Twp Eqv 1/112	Percent of Twp Eqv 1/112	Initial Data Entry Twp Eqv 1/112	Number of Oil and Gas Cases	Avg. No. Cases per Oil and Gas Twp Eqv 1/112	Area, Number of Townships Current Status Original Federal Complete Area Twp Eqv 1/112
Alaska	16209	16209	1	100.0	16209	1	16209	16209
Arizona	3164	3164	1	100.0	3164	1	3164	3164
California	4400	4400	1	100.0	4400	1	4400	4400
Colorado	2006	2006	1	100.0	2006	1	2006	2006
Idaho	2321	2321	1	100.0	2321	1	2321	2321
Montana	4081	4081	1	100.0	4081	1	4081	4081
N. Dakota	1963	1963	1	100.0	1963	1	1963	1963
S. Dakota	2140	2140	1	100.0	2140	1	2140	2140
HI Total	0906	0906	1	100.0	0906	1	0906	0906
Nevada	3971	3971	1	100.0	3971	1	3971	3971
New Mexico	3300	3300	1	100.0	3300	1	3300	3300
Oklahoma	1942	1942	1	100.0	1942	1	1942	1942
Texas	7426	7426	1	100.0	7426	1	7426	7426
UT Total	12140	12140	1	100.0	12140	1	12140	12140
Oregon	2693	2693	1	100.0	2693	1	2693	2693
Washington	1094	1094	1	100.0	1094	1	1094	1094
OR Total	4508	4508	1	100.0	4508	1	4508	4508
Utah	2359	2359	1	100.0	2359	1	2359	2359
Wyoming	2720	2720	1	100.0	2720	1	2720	2720
Kansas	2205	2205	1	100.0	2205	1	2205	2205
Nebraska	2145	2145	1	100.0	2145	1	2145	2145
NE Total	7150	7150	1	100.0	7150	1	7150	7150
Eastern States	19597	19597	1	100.0	19597	1	19597	19597
PLS States	13460	13460	1	100.0	13460	1	13460	13460
Non PLS St.	33057	33057	1	100.0	33057	1	33057	33057
US Total	111216	111216	1	100.0	111216	1	111216	111216
TOTAL (49 St.)	111216	111216	1	100.0	111216	1	111216	111216

- 1/ Twp Eqv. = Total Sq MI/36, Sq MI from "Public Land Statistics, 1980", Table 1. Survey Twp or Survey Twp Equivalent = Twp Eqv. x 1.112 Twp equivalents. 8/905 Public Land Survey Twp, 69405 In "lower 40", Survey Twp equivalents in Note and Bounds (non-PLS) 24,231.
- 2/ Leases as of 10/1/81, Lease Applications pending longer than 6 months as of 1/5/82; MO Instr. Memo 02-227, Attachment II, 2/24/82, (AA-530). Alaska 4064 excluded from the total and percentage calculation.
- 3/ Table Number(s) in "An Automated Land and Mineral Record System, A Proposal with Initial Emphasis on the Oil and Gas Program" Paper by Bureau of Land Management, Denver Service Center, March 15, 1982.
- 4/ Alaska excluded at this time because they have an operating land records system.

A "HUMAN" OF WORK MONTHS AND COSTS
 PHASE II: IMPLEMENTATION OF THE "TRIAL"
 REQUIREMENTS BY STATE FOR ENTRY OF LAND DESCRIPTION AND LAND STATUS DATA,
 FOR OIL AND GAS TOWNSHIPS ONLY AND FOR ALL TOWNSHIPS

5/10/02

U.S. Administrative State	OIL AND GAS TOWNSHIPS ONLY					ALL TOWNSHIPS 5/				
	Number of Townships 4/	Land Descript. HM 1/	Land Status HM 2/	Land Descript. Cost 3/	Land Status Cost 3/	Number of Townships 5/	Land Descript. HM 1/	Land Status HM 2/	Land Descript. Cost 3/	Land Status Cost 3/
Arizona	2,100	52	150	145	433	3,472	86	260	240	713
California 7/	1,500	30	112	106	306	4,036	120	363	336	992
Colorado	2,000	50	150	140	411	3,177	79	230	221	652
Idaho	900	22	60	62	103	2,546	62	191	177	524
Montana	4,709	119	360	336	906	0,906	223	674	624	1,046
Nevada	2,500	62	100	173	515	3,369	04	253	233	692
New Mexico 5/7/	3,000	74	225	207	616	6,239	155	460	427	1,201
Oregon 7/	2,000	50	150	140	411	5,034	125	370	349	1,034
Utah	2,100	52	150	145	433	2,509	64	194	100	532
Wyoming	3,000	74	225	207	616	7,045	195	500	544	1,611
Eastern States	7,500	327	1,124	1,020	3,004	21,792	1,002	3,369	3,026	8,952
TOTAL	31,309	965	2,917	2,609	7,900	69,005	2,275	6,076	6,357	10,029

1/ Land Description Workmonth Distribution: 50 3.3 hr/lwp 25.39 Percent, 50 1.2 hr/lwp 9.23 Percent,
 Contract 2.2 hr/lwp 51.16 Percent.

2/ Land Status Workmonth Distribution: 50 3.3 hr/lwp 25.39 Percent, 50 1.2 hr/lwp 9.23 Percent,
 Contract 0.5 hr/lwp 65.30 Percent.

3/ UH Costs @ \$3,000/HM Contractor Costs @ \$2,600/HM

4/ Townships with only Oil and Gas Case Activity, Leases and Applications.

5/ Townships in "Lower 40" Included only 400 Townships of 0264 Townships in Texas and excludes Non-Public Land Survey
 areas in the Eastern States, an equivalent of 14967 Townships in the original colonies.

6/ UH's and Costs double for Eastern States since Master Title Plats and Historical Indexes are not available.

7/ Some Land Description work in progress (CA, NM, OR) but included in this table.

Appendix 11
ALMRS
TASK FORCE STUDY
Hardware Alternatives

I. Purpose of Study

The purpose of this study is to scope out the hardware, software, physical facilities, personnel, and other resources necessary to automate the Bureau's Land Status, Mineral Records System, MBO, and other applications. This study identifies the major equipment requirements for the next three years based on known approved Bureau applications.

II. SERI Alternative

The initial SERI Computer Center study is attached for background information purposes. The SERI Center was later considered as an alternate processing site from a broader perspective, that being acquiring one of their computers off the GSA ADP Equipment Excess List which would be at no cost to BLM. This option is available should SERI fold completely. Mr. Kenneth Gilliam, the resident manager for the facility's management firm, Midwest Research Institute, informed BLM that SERI wants to retain certain support for their Engineering & Scientists Staff, i.e., they do not plan to shut down their facility. Another option explored was for BLM to take over the ownership, operation, and responsibility of the SERI facility and facility management contract with Midwest Research Institute. This option would cost a minimum of \$1,020,000 for the facility's management contract which includes personnel, maintenance, supplies, overhead, etc., through June, 1983, and an additional \$255K through the rest of FY-83. If BLM cancelled the facility's management contract, there would be an early cancellation penalty among other costs. The cost of BLM operating the entire Center in a like manner would approximate

UPGRADE CENTRAL SITE COMPUTER CAPABILITY

OPTION I

- I. Procure one additional 66/80 processor and associated peripherals (use existing IOM, FNP, Disk (Model 500), tape, printers, etc.).

<u>ITEM</u>	<u>Cost</u>	<u>Date of Installation</u>
1 CPU (Model 6801)	1200K	120 days from order
4 Disk Drives (Model 500)	200K	
	<u>1400K</u>	

II. DISCUSSION

A. Pros

1. Increase in processor capability: 53%.
2. Enables configuration of separate interactive and batch systems.
3. Option remains to procure one additional CPU at a later date (120 days delivery).
4. Total compatibility of all system components - full back-up.

B. Cons

1. Lower performance ratio than other alternatives.
2. Manageable space and air conditioning problems will be encountered if installed before June, 1983.
3. Corporate support diminishing for GCOS-3 software.
4. 66/80 components require more space and air conditioning than DPS-8 components.
5. Unable to upgrade disk components beyond 0500 drives (0501 doubles capacity of 0500 in same amount of space, etc.).
6. Unable to keep abreast of latest system hardware and software components, e.g., GCOS-8, not available on 66/80 system.
7. Most costly option over the long-term.

OPTION II

- I. Retain 66/80 system as is (including peripherals). Also, procure one DPS-8 system.

<u>ITEM</u>	<u>Cost</u>	<u>Date of Installation</u>
1 DPS-8 system		120 days from order
CPU		
IOM		
FNP		
SCU		
Printer		
Tapes		
Disks (8 Model 500)		
<u>Card Reader</u>		
Package price	1500K	

II. DISCUSSION

A. Pros

1. Increase in system capability: 82%.
2. Enable configuration of separate interactive and batch systems.
3. Option remains to procure additional system at a later date.
4. Latest hardware/software (GCOS-8 potential on DPS-8).
5. Applications and GCOS-3 software compatibility with 66/80 and DPS-8.

B. Cons

1. No-duality, i.e., no simultaneous sharing of system components with 66/80.
2. Space and air conditioning problems if all DPS-8 system components installed before June, 1983.
3. Diminishing corporate support of GCOS-3 software.
4. Additional software personnel required to support GCOS-8 if future decision made to implement.
5. Additional operator personnel depending on configuration and use of systems.

OPTION III

I. Upgrade current H66/80 system to DPS-8. Procure additional disk.

<u>ITEM</u>	<u>Cost</u>	<u>Date of Installation</u>
Upgrade 6801 CPUs to Model 870	1100K	120 days from order
Disk (4 Model 500)	200K	
	1300K	

II. DISCUSSION

A. Pros

1. Increase in system capability: 55%.
2. Latest CPU hardware. (GCOS-8 potential).
3. Compatible with current applications, GCOS-3 software, and system hardware components.
4. Little additional space and air conditioning required.

B. Cons

1. Not cost effective (procurement).
2. No option for future CPU upgrade without competitive procurement.
3. Requires significant peripheral upgrade to utilize GCOS-8 operating system (additional costs involved).
4. Option to configure dual processors to separate interactive and batch processors is not viable.

OPTION IV

1. Upgrade current CPUs to DPS-8 level. Install additional DPS-8 system (see attached contract modification).

<u>ITEM</u>	<u>COST</u>	<u>Date of Installation</u>
Upgrade 6801 CPUs to 870	1100K	120 days from order
Additional DPS-8 system:		
CPU	833.7K	
Memory (512KW)		
SCU		
IOM		
Upgrade Disk 500		
to 501	50K	
Peripheral switch unit	8K	
FNP	105K	
Page Printer System	200K	
TOTAL	2296K	

II. Discussion

A. Pros

1. Increase in system capability: 137%.
2. Enable configuration of separate interactive and batch systems. Like CPUs also provides greater flexibility in configuring these systems.
3. Compatible with current applications, GCOS-3 software, system hardware components.
4. Latest hardware and software components on at least one system.
5. Upgrades system to near-current state-of-the-art, thereby extending system life cycle 3 to 5 years.

B. Cons

1. Requires upgrade of previous H56/80 FNP to utilize GCOS-8 software.
2. No option for future CPU upgrade without competitive procurement. (Exhausts optional quantity for CPU under current contract.)
3. Manageable space and air conditioning problems if everything installed prior to June, 1983.
4. Additional software personnel required to support GCOS-8 if future decision made to implement, and we also continue operation of GCOS-3 on other system.

Number of CRT (Input/Output)

Stations	100	\$2100 each	210K
Number of Printer Stations	40	\$2000 each	80K
Communications Equipment-Modems	100	\$125/mo/annual	150K
Supplies, Misc., Start-up Costs			100K
Operators (5-2 shifts)			120K
1 - GS-10			
3 - GS-08			
Software			10K

V. Procurement Strategy

The additional components of the proposed computer system are optional quantities under an existing contract and do not require any further procurement action short of issuing a requisition. The delivery time for these components is approximately 120 days.

3 - Central Processing Units

The balance of the components required to complete the systems configuration can be procured likewise and delivered within approximately 120 days.

The acquisition of the terminal/printer stations and communications equipment requires a fully competitive procurement action which, including delivery, would take approximately 180 days.

OPTION IV MODIFICATION

Upgrade current 66/80s to DPS-8

1100K - OTC

Lease 1 DPS8 System

687.0K

Cost for Equipment FY 83

1787K

Cost for Equipment FY 84

800K

Appendix 12
Automation Task Force Meeting
April 22, 1982



United States Department of the Interior

BUREAU OF LAND MANAGEMENT
WASHINGTON, D.C. 20240*D-220*
Hand

MAY 3

D-480
D-200

Memorandum

To: Distribution List

From: Chief, Division of Oil and Gas

Subject: Automation Task Force Meeting, April 22, 1982

Based on direction received at the Director's meeting on Tuesday, April 27, 1982, the attached paper is submitted for your review.

Please direct comments to Michael Schwartz of my staff (343-7753) or Mike McNeill, Division of Information System (653-8853).

Noting

Attachments

Distribution List:

Burford (100)
Parker (101)
Tidwell (102)
Engdahl (103)
Blackstone (500)
Vail (200)
Petty (700)
Ruch (Denver-100)
Lawton (510)
Hildebeidel (160)
McNeill (870)
Jordan (540)
Steele (321)
Arndorfer (Denver-400)
Cotner (840)

Automation Task Force Meeting - April 22, 1982

The following is a paper which summarizes the results of the Automation Task Force Meeting held on April 23 at the Denver Service Center, describes costs, and recommends additional analysis of automation efforts.

I. Issues

A. Lease Recordation

1. Automating Lease Applications (beginning June 1, 1982)

- This will be accomplished with existing personnel and the existing equipment. It will not facilitate backlog reduction.

Based on an estimated 20 minutes/case, we believe that one terminal will be used for this purpose on the average of two hours per day. In States which receive over 20 OTC offers per day, one terminal will be required for full time use.

Because the available terminals are being used for mining claims, there could be some impact on that program. All States were asked to report during the week of April 26 on this potential conflict. To date we have not received responses.

Some technical issues need to be ironed out such as assuring that the public will have access to the location of pending offers. This will require, at a minimum, a daily printout of pending offers. As an option, a CRT could be placed in the public rooms. The Arizona SO is currently doing this by providing a list of applications. Upon action and notation on plats the listing is removed.

2. Automation of Pending Applications (to be completed by August 31).

This would be an extension of the above system. We estimate that approximately 40,000 cases will have to be processed. This workload translates into 7 FTE (\$210,000). We believe that each SO would also need an additional terminal and CRT. Estimated equipment cost is \$50,000.

3. Recording all Existing Leases (tentatively scheduled for completion by December 31, 1982).

Based on an existing 120,000 leases, the cost of automating leases would be approximately \$650,000 (21 FTE), assuming no additional equipment cost and batch entry done at the Denver Service Center.

Lease Recordation

<u>Type</u>	<u>Timeframes</u>	<u>Outputs</u>	<u>Cost</u>	<u>Funding Source</u>	<u>Comments</u>
New Applications (FY 82)	Continuous Starting June 1	Serial Register Page Case Abstract Geographic Location Index Receipt and Accounting Advices Applicant Index	Minimal (but could impact Mining Claim Recordation)	Oil and Gas (4111)	
Pending Applications (FY 82)	June 1 - August 31	Same as above except for Receipt and Accounting Advice	W/M - \$210,000 allocated to States Equipment \$ 50,000 allocated to States	4111	Funds would have to be made available at Mid Year Review
Existing Leases (FY 82-83)	September 1 - December 31	To be determined	W/M - \$650,000 allocated to States and DSC	4111	Timeframe is not realistic or necessary. Data needs are not yet determined

There are other questions raised concerning recordation of existing leases. There appears to be no money or time savings gained by recording all existing leases by December 31, 1982. Only if SIMO lists could be generated through the computer immediately would there be a savings to justify the timeframe. This, however, cannot be accomplished until land survey and status information is entered on the computer. (See 3.B. for survey/status cost breakdown).

Additionally, no determination has been made concerning the type of information which should be abstracted from case files. If the files are to be used solely for reporting purposes, one set of data is required whereas another set would be required if the information is to be used for adjudicative purposes. Although adjudication by computer is several years off, it would be economical to gather all information which could be used later rather than limiting the abstracting to information for statistical purposes only. We also note that unless abstracting is done during evening hours, there will be some inefficiencies resulting from the removal of files from dockets.

Although no determination has been made, at a minimum, the information listed below must be abstracted for statistical purposes. In addition other items, such as lease stipulations, may also be valuable. Prior to starting this process, coordination with the Forest Service and MMS should take place to ensure that the information stored is compatible with the information systems already established by these agencies. To date, we have no indication as to the capability of BLM's proposals to interact with other agency systems, once our conceptual decisions are made and before we determine hardware requirements, we should begin coordinating actions with both agencies to make sure systems are compatible.

List of Minimum Information Needs

- Case Type
- Date Lease Issued
- Legal Description, including Acreage
- Record Title Holder(s)
- Expiration Date of Lease
- Date Annual Rental is Due
- Whether Lease is in a Unit
- Royalty Rate
- Suspensions

B. Computer Hardware

The Service Center Staff gave four options for hardware acquisition based on perceived computer capacity. The cost varies from \$1.3 - 2.2 million. Purchase would have to be made prior to committing Bureau to automating survey and status for 40,000 oil and gas townships. A paper describing these options is enclosed.

C. Land Survey and Status

Prior to committing funds, we need a summary and conclusions fund report on the Lakeview Oregon Trial project. Our best estimates for lands survey and status acquisition, including contracting and quality control, are:

- Land Survey at \$35 per township (contract)	\$ 1,400,000
- BLM Quality Control - Survey	1,387,000
- Land Status at \$155 per township (contract)	6,200,000
- BLM Quality Control - Status	3,121,000
	<u>\$12,108,000</u>

Quality Control of the contractor is vitally important because incorrectly completed work will prevent the Bureau from improving the efficiency of its procedures and could result in a significant decline in the quality of records. These are unacceptable consequences. The BLM quality control costs are based on estimates of the number of minutes per townships it will take to verify and edit the contractor's work. It is our understanding that these costs are based on a review of the work for each of the \$40,000 townships potentially involved in the project. Costs can be reduced if the risk factor is increased.

D. Software

The Service Center estimates that development of a software package to implement DPP 82-3 (Oil and Gas Casework Automation) will cost approximately \$400,000.

At this time the package will probably not be able to do the following:

- Note violations of six-mile rule
- Note incorporated cities and towns.
- Identify stipulations other than standard stipulations
- Generate a SIMO list

II. Estimated Costs

	<u>W/M</u>	<u>Procurement</u>	<u>Total</u>
FY 1982 -	\$ 210,000	\$ 50,000	\$ 260,000
FY 1983 -	1,050,000	2,200,000	3,250,000
FY 1984 -	<u>4,508,000</u>	<u>7,600,000</u>	<u>12,108,000</u>
Total	\$ 5,765,000 --	\$9,850,000	\$15,618,000

III. Recommendations

A. Lease Recordaton

Continue with current plans for new applications (June 1, 1982) and record all pending applications by August 31, 1982.

For all existing leases, data capture should be completed by September 30, 1983, rather than December 31, 1982. Energy and Minerals and Lands should, in consultation with field offices, determine what information will be entered into the computer for existing leases. A decision document should be prepared and recorded by the Division of Oil and Gas in consultation with field offices and the Denver Service Center to be forwarded to the Director for concurrence by August 31, 1982.

B. Computer Hardware

Funding for new hardware should be spread among the Divisions of Information Systems, Oil and Gas, and Lands. Lease and/or purchase should take place during FY 1983. The Division of Information Systems shall be responsible for making specific recommendations based on technical considerations for overall Bureau needs. Purchase or lease shall be dependent on a decision to automate land survey and status.

C. Land Status and Survey

The Director, Denver Service Center, shall prepare, by July 1, 1982, a final report on the trial project. The report shall provide, at an appropriate level of detail, the results of the project, including problems uncovered and opportunities for improvement. The report should also describe how the process will be carried out Bureauwide and the sequencing of implementation.

If the decision is made to proceed with automation beyond FY 1982, then the necessary procurement work should be completed in FY 1983 but obligation of funds should be deferred until 1984. This will allow the hardware to be put into place and provide maximum flexibility. Funding should be shared among oil and gas, data processing, and lands. We are aware that an initial contract could be let in FY 1982 if funds were made available.

D. Software

Program should be completed during FY 1983 based on requirements of DPP 83-3 and the ability of the status and survey project to provide data. The Division of Oil and Gas will fund the effort. We would like an improvement in the package so that SIMO lists can be generated. Enclosed is a synopsis of what the ideal software package will be required to do.

II. Statement of Problem and Identification of Program Needs

Statement of Problem: The Bureau is presently faced with an unprecedented onshore oil and gas case management burden created by the demand to develop the nation's hydrocarbon resources and the increased public interest in the simultaneous oil and gas (SOG) program. During 1981, the Bureau's SOG program alone received 4.7 million oil and gas offers for approximate 4,850 parcels of land. In terms of total lease related workload, the Bureau received 28,500 lease applications and issued 14,000 oil and gas leases. In addition, there were an estimated 43,000 applications pending further action at the end of 1981. The magnitude of this caseload is anticipated to increase substantially over the next few years due to the Bureau's commitment to: 1) accelerate the backlog reduction; 2) streamline the leasing process; and 3) implement the Secretary's policy to increase access to lands for purposes of oil and gas development. In the event that procedural changes are not implemented, the anticipated increase in demand for available lands coupled with the existing backlog will result in the Bureau's inability to meet the established program goals of this Administration.

Identification of Program Needs: The development and implementation of an automated program to record, process and monitor oil and gas lease applications will ensure the expeditious leasing of lands; the elimination of time-consuming manual processing and existing program redundancies; and the enhancement of program planning and guidance. Such a program would involve the establishment of the following components:

- recordation and accounting advise system for over-the-counter (OTC) offers and Simultaneous Oil and Gas (SOG) applications (drawing winners);
- adjudicative processing system for OTC offers and SOG applications;
- SOG available land listings;
- lease stipulation file system; and,
- quarterly workload analysis and reporting system.

The establishment of these program systems will facilitate the recordation and processing of oil and gas lease applications; the identification and posting of lands available for the SOG program; the identification of required stipulations; and the administrative accounting and monitoring of all lease-related activities.

III. Objectives and Recommendations

Program objectives: In order to meet the administrative objectives of increased access to lands, accelerated lease processing and issuance, and elimination of existing backlog; the development of the following systems must be completed.

Quarterly Workload Reporting for OTC and SOG

- cases pending (quarter end)
- cases pending (quarter start)
- cases processed
- leases issued
- backlog analysis
- special reports

Recommendations: The recommended program components include 1) recordation, monitoring and accounting advise systems, 2) SOG available lands system, 3) lease adjudication and issuance systems and 4) quarterly workload analysis and reporting system. To ensure meeting administrative objectives within specified timeframes, the various system components must developed concurrently.

A training package should be developed inconjunction with the implementation of the program components. This would include automated, self-help training routines for data entry, manipulation, interim outputs and quarterly reports.

In general, the program components will be implemented at a central location with terminal access from each State Office. These include 1) recordation, monitoring and accounting advise systems, 2) lease issuance systems and 3) quarterly workload reporting system. The lease adjudication processing system and SOG available lands systems will be located in each state office with data output (leases acceptable for issuance and available lands listing respectively) filed at the central facility for use in other system components. All data filed at the central facility will be accessible by each state office and the Division of Oil and Gas in the Washington Office.

The work effort necessary to develop and implement this management system may be completed within the Bureau or under contract by an outside source.

Estimates for programing costs workload requirements and develop timeframes will be necessary for each of the system components identified as well as the integration and implementation of all components into a unified program.

IV. Description

The following is a step by step walk through of how we envision an automated system to operate. We have not yet attempted to address the issue of data format, however, we expect and will be prepared, to accept certain restrains

regarding the display of data in the automated file that may arise because of machine limitations. More important, as we see it, is the ability of the final program to accept data easily. This may best be done if the system queries the operator for the next data element or signals which information should be input next and in what form, e.g., "now enter the applicant's name, last name first." Also of importance is that the record and any output be labeled clearly.

Ultimately we expect the system to contain about 175,000 to 200,000 case files on 150 to 175 million acres into which is entered not only lease information but several other record items such as assignments, of which there may be an average of five per lease that must be kept on record as well as entries on notices of intent to do seismic work, applications for permit to drill, bonds posted and abandonment actions. These latter actions have not been treated in this analysis but will be covered later as they become part of an automated casework and record system.

We also anticipate linking the casework system to an automated environmental analysis record system which will list information section by section for BLM lands from RMPs such as leasing suitability and stipulations.

This information can be coded with a two digit format so as to link (for Step I 12c) stipulations, for example, with the tract (T and R) under consideration. An outline of this approach is attached.

Appendix 13
Solicitor's Comments on Land Status
Records Automation
September 3, 1982

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF THE SOLICITOR
WASHINGTON, D.C. 20460

MEMORANDUM

TO: Director, Bureau of Land Management (870)

FROM: Associate Solicitor, Energy and Resources

SUBJECT: Automated Data Processing--BLM Land Status Records

In conjunction with BLM planning to computerize its land status records, you have requested an expression of our views with regard to the following questions:

1. Will the entry of information into an automated land status record system have the same force and effect as the manual noting of the BLM land status records?
2. Will data generated from an automated source be admissible as evidence in litigation?
3. Can the manual notations, and in turn, the existing paper-based records be eliminated? If not, must all applications and entries be noted on the "Official Record" (Title 43 CFR Subpart 1813)?

The answer to each of these questions is yes, when analyzed from a legal perspective.

INTRODUCTION

a. The old status records

Keeping separate land status records--the tract books and the status plats--in the federal land offices, and the idea of "noting" the status records, was not an administrative innovation. Section 8 of the Act of May 18, 1796, c. 29, 1 Stat. 464, 468, introduced the concept of maintaining a status plat on which tracts sold under the Act were to be noted. Section 7 of the Act of May 10, 1800 c. 55, 2 Stat. 73, 75-76, directed the registers of the land offices to enter purchase applications "...on books kept for that purpose only..." and to note in the margins thereof installment payments and reverters occasioned by payment defaults. Section 8 of the same Act provided for

specified notations to be made "...on the book of survey or original plat..." (i.e., the status plat) and directed that "...the said book of surveys or original plat shall be open at all times, in the presence of the register, for the inspection of any individual..."

The noting of the land status records was accomplished by manual postings consisting primarily of abbreviations that evolved through custom and actual usage for entries and other notations required to administer the land laws. However, surveyed areas of the public domain reserved for a special purpose, e.g., lighthouses, Indian reservations or forts, often were shown in color on the plats. The status plat for each township was, before its adaptation for that purpose, a triplicate original of the official plat of survey for the township. See, 43 U.S.C. § 751, Subd. 8. Thus, the old status plats served the dual purpose of providing official land survey information as well as status data. 1/

The tract book system of the land offices grew out of the entry book requirements prescribed by the Act of May 10, 1800, supra:

"The tract book system of recording was established on May 10, 1800 [f.n. omitted] at the time that surveyed lands in Ohio were opened to entry and settlement. The tract books were designed primarily for the maintenance of a permanent reference for all transactions involving the surveyed public lands..."

1/ The term "status" has been defined as the availability of a given tract of land for governmental or private use, or for the disposal of the land or its resources into non-federal ownership or tenure. Memorandum, dated February 27, 1978, from Associate Solicitor, Energy and Resources, to Director, BLM, entitled "Proposed OAD Notation of Records-Applications for Withdrawal." Not all actions affecting the "status" of a tract of land are shown on the land office status records; e.g. Rev. Stat. § 2477 rights-of-way; therefore, the preceding definition should be limited to only status information that is shown on the official BLM land status record. Also, as an added technical refinement, the words "or lease" should be added after the word "disposal" in the preceding definition.

"... The organization of the tract books is based upon administrative discretion and decision, and changes or modifications in the form, format, content, nature or designation of the tract books have been accomplished solely by administrative action."

Meek, "Federal Land Office Records", 43 Colo. Law Rev. 177, 183 (1971) (hereinafter "Meek"). 2/ Both judicial decisions and the regulations of the Department of the Interior recognize the old tract books and status plats as the official land status records of the land offices.. Bly v. United States. 3 Fed. Cas. 767, 768 (C.C.D. Minn. 1877); Jesse D. Carr Land & Live Stock Co. v. United States, 118 Fed. 821, 823-824 (9th Cir. 1902); Nurnberger v. United States, 156 Fed. 721, 727 (8th Cir. 1907). See also, Galt v. Galloway, 29 U.S. (4 Pet.) 331, 341-342 (1830); Hastings and Dakota R.R. v. Whitney, 132 U.S. 357, 364 (1889); Howard v. Perrin, 200 U.S. 71, 73 (1906); 43 C.F.R. Subpart 1813.

b. The new status records

In 1955, BLM inaugurated a new land status records system for the whole or portions of 16 western states, including Alaska. 3/ The major elements of the revamped system, which replaced the old and outmoded tract books and status plats, consist of: (1) an historical index for each township; (2) a master title plat for each township (actually a diagram and not a survey plat); and (3) use plats, including mineral leasing plats, for each township (actually diagrams and not survey plats). U.S. Department of the Interior, Bureau of Land Management, "Land and Survey Records", 14 (1970); Meek, 187-191; BLM Manual 1275. 4/

2/ The serial register, introduced near the turn of the century by administrative action of the Department, 37 L.D. 45, provides status data from the standpoint of the individual case file, in contrast to data generated from the township status records, i.e., the tract books and status plats. Each new case is assigned a serial number which appears on the original documents relating to the case and in relevant notations added to the status records. See, BLM Manual 1274, 1275.

3/ The new land status records system was not extended to the BLM Eastern States Office which serves the 13 easternmost public land states.

4/ The new land status records system did not eliminate the use of the serial register.

The new land status records have been recognized as the functional records of the land offices by both the BLM Manual and the administrative appellate decisions of the Department. However, they have not been recognized by statute or regulation as the official land status records of the BLM land offices. This omission appears to have led to the ambiguity displayed in two relatively recent decisions.

In Southwestern Petroleum Corporation v. Udall, 361 F.2d 650 (10th Cir. 1966), the court concluded that the assignee of a non-competitive oil and gas lease, filed for in 1958, issued by the BLM New Mexico State Office in 1959 and assigned in 1959, could presume regularity in the issuance of the lease "...where the Land Office serial register pages, tract book and plat (not master plat) show the particular lands to be available for leasing and the particular lease to be in good standing." Id. at 657. The new BLM land status records were installed in the New Mexico State Office in 1957 or 1958. Perhaps they were not employed in connection with the particular lease transaction before the court, which would account for the court's reference to the old status records. But, if that were so, why did the court expressly exclude the "master plat", which is a component of the new system? Was the court seeking to distinguish the old system from the new system or, by implication, was the court rejecting the new system in favor of the old system which was still officially recognized in the Department's regulations? Or, possibly, the court was seeking to distinguish the oil and gas plat from the master title plat, since both are employed in the new record system. Clearly, the reader is left in doubt.

In Amoco Production Company v. United States, 619 F.2d 1383 (10th Cir. 1980), the appellate court directed the trial court on remand to consider "...an official BLM land office plat and historical index..." as "...evidence..." of an alleged retained mineral interest of the government, but in a closing footnote the court pointedly and cautiously added "...the BLM land office plat and historical index appear to be official records of a governmental agency and may qualify as 'public records' under the federal rules [of evidence]" (emphasis added). Id. at 1391-1392.

Revision of the Department's regulations in 43 C.F.R. Subpart 1813 to properly reference the new records as part of the official BLM land status records system should remove the ambiguity and uncertainty that is displayed in these judicial pronouncements.

c. Computerizing BLM land status data

As we understand the program, mini-computers in each state office will be utilized to store and make available all of the land status information that is normally compiled and provided by the particular office. Data will be entered into the computers through conventional keyboard procedures. The data will be stored on magnetic tapes and retrieval will be accomplished by "CRT" (cathode-ray tube) visual screen images or by hard-copy printouts. Backup data storage capacity will be provided by the BLM centralized computer in the Denver Service Center.

DISCUSSION

Question 1

Will the entry of information into an automated land status record system have the same force and effect as the manual noting of the BLM land status records?

Whether an inscription is made directly by hand on the official land status records or is posted to the records by computer keyboard input procedures would not, in our opinion, alter the legal effect of a notation. What differs is the mode of record keeping--computerization as opposed to handwritten entries made on paper records. The degree of accuracy and reliability in entering, retaining and retrieving computerized data is a matter of practical concern that is best taken into account under the rules of evidence. This subject will be addressed in our comments pertaining to the next question.

Question 2

Will data generated from an automated source be admissible as evidence in litigation?

At an early date, the Supreme Court recognized the importance of the land office records as evidence in land disputes:

"The register of the land office keeps a record of all entries and surveys; and on his official certificates, patents are issued by the government. His records are always under his control; and all entries

made in them are made by himself, or by a person authorized to act for him. As the records of this office are of great importance to the country, and are kept under the official sanctions of the government, their contents must always be considered, and they are always received in courts of justice, as evidence of the facts stated..."

Galt v. Galloway, 29 U.S. (4 Pet.) 331, 343 (1830). See also, Culver v. Uthe, 133 U.S. 655, 657 (1890); Howard v. Perrin, 200 U.S. 71, 73 (1906). 5/- The court went on to add:

"The facts, therefore, proved by these records, must be received as prima facie evidence of the right of the person at whose instance they were recorded, and as conclusive in regard to such things as the law requires to be recorded..." Id. at 343.

This early precedent was followed in subsequent cases. Thus, in Bly v. United States, 3 Fed. Cas. 767, 768 (C.C. D. Minn. 1877), Judge Dillon concluded:

"I am of the opinion that the official plats and books in the office of the register of the United States land office, produced and explained by that officer, were admissible in evidence on the part of the government to establish, or as tending to establish, the fact that the lands in question had not been sold by the United States.

5/ In Howard v. Perrin, the Supreme Court held that copies of certain papers and records of the General Land Office, as certified by the local land officers, were competent evidence "...to show that on the records of their office were no homestead, pre-emption or other valid claims, and that the land had not been returned or denominated as swamp or mineral land." The court cited Rev. Stat § 891, which sanctioned certified copies if made by the Commissioner of the General Land Office or, when that office was vacant, the Chief Clerk of the General Land Office. Compare, 43 U.S.C. §§ 13, 83 and 1460; 28 U.S.C. § 1733.

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"These plats and books are the official records of the office, and are kept by the register so as to show that lands are taken under the pre-emption, homestead or other laws of the general government. These official records in connection with the testimony of the register, showed that the locus in quo was vacant land which had never been disposed of by the United States, and were sufficient prima facie to establish that fact..."

And, in Jesse D. Carr Land and Live Stock Co. v. United States, 118 Fed. 321, 324 (9th Cir. 1902), it was similarly observed that an official tract book of the Land Office, after having been allowed in evidence, was prima facie proof that the lands in issue were in fact public lands as shown on the tract book. See also, Nurnberger v. United States, 156 Fed. 721, 727 (8th Cir. 1907).

In each of these decisions, the courts no doubt had the hearsay rule in mind and, therefore, relied to a considerable extent on the fact that the records presented were the official records of the Land Office, used in the ordinary course of the business of that office, as sanctioned by law. In light of this consideration, it is our further recommendation that 43 C.F.R. Subpart 1813 be amended not only to reflect the new BLM land status record system but also to state that data in the system will be stored and made available, to office personnel and the public alike, through a uniform automated data processing program of the Bureau.

Assuming that these changes in the regulations are made, we would expect that normally computer printouts of the official land status records would be admissible as evidence in virtually all federal court proceedings, provided that in each case the printout is properly introduced into evidence and, of course, tends to prove or disapprove one or more of the factual issues in contention. 6/

6/ This conclusion most likely would apply as well to the majority of state court proceedings. However, for lack of time, our research has been limited to the Federal Rules of Evidence, which are applicable to the bulk of evidentiary proceedings in the federal courts. See, Rule 1101 of the Federal Rules of Evidence, 28 U.S.C. Appendix at 602-603.

In order to be properly introduced--and thus admitted--into evidence, the contents of a computer printout must overcome several protective barriers that have been erected by the rules of evidence. These barriers consist of the hearsay rule, the best evidence rule, authentication of the printout document and last, but by no means least, laying a proper foundation for the admission of the contents of the printout into evidence. See, Fenwick and Davidson, "Admissibility of Computerized Business Records", 14 Proof of Facts 2d 173, 197-198, 201-210 (1977) and cases cited therein (hereinafter "Fenwick"). As to a computer printout purporting to contain official BLM land status data, little, if any, difficulty should be encountered in surmounting the first three obstacles.

a. The hearsay rule

Computer printouts, like other written documents, by their nature are hearsay in that they derive their value from sources not before the trier of the facts, in contrast to a witness testifying under oath with regard to his own observations. Consequently, the trier is deprived of the ordinary trial devices that are utilized for ascertaining the truthfulness of a witness, e.g., testifying under pain of perjury for false testimony, cross-examination and probing or observing the character, motives and deportment of a witness.

In addition to the previously cited cases which admitted official land status records into evidence, Rule 803(8) of the Federal Rules of Evidence, 28 U.S.C. Appendix at 579, excludes from the hearsay rule records or "...data compilations in any form, of public offices or agencies, setting forth the activities of the office or agency..." 7/ This exclusion clearly applies to the official BLM land status records. It should be noted, however, that the exclusion does not apply if "...the sources of information or other circumstances indicate lack of trustworthiness."

7/ In explaining the expression "data compilations", the Advisory Committee Comments accompanying Rule 803 state that the expression "...is used as broadly descriptive of any means of storing information other than conventional words or figures in written or documentary form. It includes, but is by no means limited to, electronic computer storage." 28 U.S.C. Appendix at 583. The Advisory Committee Comments, at 583, also cite Howard v. Perrin, cited in the text, supra, as illustrating the admissibility of records of the activities of an office or agency.

b. The best evidence rule

Because a computer printout represents a copy of information electronically or magnetically recorded, it can be (and has been) argued that the printout is not the best evidence of what is in the memory of a computer. Perhaps of even greater significance is the fact that stored computer information often is derived from paper records (applications, order forms, etc.) which in actuality are the best evidence of their contents. The best evidence rule holds that a litigant wishing to prove the contents of a writing must produce the original writing, if available, as the best evidence of what the writing says.

Rule 1001(3) of the Federal Rules of Evidence, 28 U.S.C. Appendix at 600, states that "...An 'original' of a writing or recording is the writing or recording itself... If data are stored in a computer or similar device, any printout or other output readable by sight...is an original." 8/ This definition virtually eliminates the application of the best evidence rule in relation to the admission into evidence of the contents of a computer printout. On the other hand, the rule requires that the printout, or other output readable by sight, must be "...shown to reflect the data accurately..."

c. Authentication

Authentication is, basically, proof that a particular writing is in fact what the proponent of the writing claims it to be, thus allowing the writing to be introduced into evidence.

Rule 901(b)(7) of the Federal Rules of Evidence, 28 U.S.C. Appendix at 596, provides the following illustration of authentication: "Evidence that...a purported public record, report,

8/ Rule 1001(1) of the Federal Rules of Evidence, 28 U.S.C. Appendix at 599, defines "writings" and "recordings" as consisting of "...letters, words, or numbers, or their equivalent, set down by handwriting...magnetic impulse, mechanical or electronic recording, or other form of data compilation." With regard to Rule 1001(3), the Advisory Committee Comments, 28 U.S.C. Appendix at 600, point out that "...practicality and usage confer the status of original upon any computer printing...", citing the leading case of Transport Indemnity Co. v. Seib., 178 Neb. 253, 132 N.W. 2d 871 (1965).

statement, or data compilation, in any form, is from the public office where items of this nature are kept." ^{9/} The evidence referred to may--and usually does--take the form of a certificate or affidavit verifying the accuracy (in the case of a copy) and official source of the document that is sought to be authenticated, although oral testimony to the same effect of the official custodian will do just as well. See, Harmening v. Howland, 25 W.D. 38, 141 N.W. 131, 133 (1913). Rule 902(4) of the Federal Rules of Evidence, 28 U.S.C. Appendix at 598, dispenses with the need for custodial oral testimony if a copy of an original computer printout is certified as correct by the custodial official or other person authorized to make the certification. The certificate should bear the official seal of the custodial office and the signature of the certifying official. See also, Rule 1005 of the Federal Rules of Evidence, 28 U.S.C. Appendix at 601; 28 U.S.C. § 1733 (does not apply if Federal Rules of Evidence apply); 44 U.S.C. § 2112; and Rule 44(a) of the Federal Rules of Civil Procedure, 28 U.S.C. Appendix at 471. In terms of land office records, 43 U.S.C. §§ 13, 37-59, 83 and 1460 also should be considered. See also, Culver v. Uthe, supra, and Howard v. Perrin, supra.

d. Laying a proper foundation

It has been aptly observed that:

"If a machine is to testify against an accused, the courts must, at the very least, be satisfied with all reasonable certainty that both the machine and those who supply its information have performed their functions with utmost accuracy. Therefore it is essential that the trial court be convinced of the trustworthiness of the particular records before admitting them into evidence. And it

^{9/} The Advisory Committee Comments pertaining to this illustration observe: "Public records are regularly authenticated by proof of custody... The example extends the principle to include data stored in computers and similar methods, of which increasing use in the public records area may be expected." 28 U.S.C. Appendix at 597.

should be convinced by proof presented by the party seeking to introduce the evidence rather than receiving the evidence upon the basis of an inadequate foundation and placing the burden upon the objector to demonstrate its weakness."

United States v. DeGeorgia, 420 F. 2d 889, 895-896 (9th Cir. 1969) (Concurring opinion of Ely, J.). The most common reason for the rejection of computerized evidence is the failure of the proponent of the evidence to lay a convincing foundation as to its accuracy and trustworthiness. Fenwick, at 208. Also, experience has shown that in some cases the task of laying a proper foundation may be compounded by the admitted bias of the presiding trial judge against allowing the admission of computer-generated evidence. Fenwick, at 198. 10/

Customarily, the custodian of the computer-kept records or other person familiar with the manner in which the relevant records were processed and maintained will be called as a trial witness to assist in the process of establishing the requisite foundational proofs. The witness will be asked to recite his own qualifications in terms of education, training and experience, and he must establish his familiarity with the use of the

10/ In Transportation Indemnity Co. v. Seib, cited supra, in footnote 8, foundational testimony covered 141 pages of the transcript of the trial court record. The federal trial courts exercise a broad zone of discretion in determining the admissibility of documents as evidence. United States v. Miller, 500 F.2d 751, 754 (5th Cir. 1974). In this connection, it will be recalled that Rule 803(8) of the Federal Rules of Evidence (public records exception to hearsay rule), as previously quoted in the text, requires the admission into evidence of data compilations of public offices or agencies "...unless the sources of information or other circumstances indicate lack of trustworthiness", and that the computer printout exception to the best evidence rule allowed under Rule 1001(3) will not be invoked unless the printouts that are offered in evidence are "...shown to reflect the data accurately."

particular computer producing the printout that is sought to be introduced into evidence. United States v. Russo, 480 F. 2d 1228, 1241 (6th Cir. 1973). Thereafter, the witness will be subjected to a series of questions designed to establish the accuracy and reliability of the information contained in the printout. At a minimum, these questions will cover the computer input procedures, the tests for accuracy and reliability conducted to minimize human and machine aberrations and the degree to which the office employing the computer relies upon the computer's records in the ordinary course of its activities Ibid. 11/. The opposing party then will be given the chance to cross-examine the witness. Also, before trial, the opposing party will be afforded the opportunity to study the underlying data used in programs which are run through the computer, the actual programs, the computer's operational safeguards and all of the input and output information that is relevant to the contents of printouts that may be offered in evidence. This pre-trial procedure provides the adverse party and the court with an opportunity to test and examine the reliability and credibility of the proffered evidence prior to trial. Ibid.

e. Credibility of computer printout evidence

Finally, if computer printout data is admitted into evidence, the weight to be afforded to that evidence, based on the credibility of the computer and its operating environment, may present a final obstacle to the usefulness of the printout as trial evidence. See, Sprowl, "Evaluating the Credibility of Computer-Generated

11/ The importance of "airtight" computer security as well as the need for constant and stringent controls to minimize human error cannot be stressed too strongly. See, Fenwick, at 209-213. Shortcomings in either of these areas of concern with respect to computerized public records not only can result in the rejection of the records as evidence but can compromise the administrative value of the records and undermine public confidence in the office responsible for maintaining the records. BLM's experience with data processing in relation to the BLM Mining Claim Recordation System is not very reassuring in this regard. See, U.S. Department of the Interior, Bureau of Land Management, "Managing the Nation's Public Lands", at 115 (1980).

Evidence", 52 Chi-Kent Law Rev. 547-566 (1976). 12/ Thus, the value of computer-generated evidence depends largely on the skills and attitude of the human beings who actually manage, program and operate the input and output capacities of the machine on a day-to-day basis, and not on the machine itself.

Question 3

Can the manual notations, and in turn, the existing paper-based records be eliminated? If not, must all applications and entries be noted on the "Official-Record" (Title 43 C.F.R. Subpart 1813)?

Congress has granted to the Secretary of the Interior extensive supervisory and regulatory authority over those of the Nation's lands that are administered by the Secretary through the BLM land offices. 43 U.S.C. §§ 2, 1201, 1457, 1701-1771. Liberal regulatory authority also has been conferred upon the Secretary with respect to the manner in which the operations of the Department are to be conducted, including the functions of the BLM land offices. 5 U.S.C. § 301. For well over a century, successive Secretaries have exercised their general authority, as conferred by statute, to maintain, without interruption, a land status records system to serve the public and to facilitate the performance of a multitude of functions, imposed by law, which are discharged through the land offices. The evolution and maintenance of this records system occurred logically and as a necessary incident of the administration of the land laws. See, Introduction, supra. Thus, it is fair to conclude -- as we do -- that it is well within the general supervisory and regulatory authority of the Secretary of the Interior to maintain and regulate the land status records of the land offices and that the records themselves as well as the notations made thereon are, and will continue to be, an essential element of the day-to-day operations of the land offices. But, apart from the foregoing, current statutory

12/ While the earlier authorities discussed in the text may prevail in affording to a land office computer printout, if admitted into evidence, the status of prima facie evidence, there is nothing in those decisions to indicate that the land office records cannot be impeached or rebutted by other admissible evidence produced by the opposing party.

law dictates a comparable result, as the Federal Records Management Act provides specifically that:

"The head of each Federal agency shall make and preserve records containing adequate and proper documentation of the...essential transactions of the agency and designed to furnish the information necessary to protect the legal and financial rights of the Government and of persons directly affected by the agency's activities."

44 U.S.C. § 3101. 13/

We, therefore, hold to the view that it is within the discretion of the Secretary of the Interior to eliminate the manual (i.e., handwritten) notation system and the use of a paper-based land status record system. However, if the existing paper-based system is abolished, it must be replaced by another land status record system -- presumably an automated data processing system -- that, at a minimum, will fulfill the objectives of 44 U.S.C. § 3101.

The feasibility of totally eliminating the existing land status records system, and of substituting a new automated data processing system, raises a number of concerns that essentially are of

13/ The term "records" is defined as including "...all books, papers, maps, photographs, machine readable materials, or other documentary materials, regardless of physical form or characteristics..." (emphasis added). 44 U.S.C. §§ 2901(1) and 3301. The phrase "machine readable materials" was added by the Act of October 21, 1976, Pub. L. 94-575, 90 Stat. 2723, 2727, out of a concern on the part of Congress to accommodate the rapid advances in records management technology and management resulting from the use of computers. See, S. Rept. No. 94-1326, 94th Cong., 2d Sess., 2, 7 and 11 (1976).

In addition to 44 U.S.C. § 3101, the head of each federal agency is charged with a number of other responsibilities with respect to the maintenance and security of the agency's records. E.g., 44 U.S.C. §§ 3102-3106; 44 U.S.C. § 3506.

a non-legal nature. 14/ Therefore, there is little else that we can add, except to point up the fact that the Department and BLM must adhere to prevailing statutory and regulatory procedures, pertaining to federal record requirements, in assessing or replacing the existing land status records. 15/

CONCLUSION

The Secretary of the Interior has in the past exercised broad discretionary authority with regard to the land status records of the government's land offices. While initially the permanent maintenance of the status records was left entirely to the executive's discretion, these records are now required to be maintained by law. However, the manner in which the records are to be kept in the land offices is still left largely to the Secretary's discretion, subject only to federal laws and regulations relating to federal record requirements in general, apart from a special exception pertaining to Alaska homestead entries which is scheduled to expire in 1986.

Given this latitude and sufficient funding, the Secretary may convert the present paper-based land status records system into an automated, i.e., computer-based, system without altering the effect of the notations that are posted on a daily basis to the land status records.

14/ An exception prevails in the case of homestead entries. These entries, as a matter of statutory law, must still be noted on the old tract books and status plats. 43 U.S.C. § 162. However, Section 702 of the Federal Land Policy and Management Act of 1976, 90 Stat. 2787, repealed the homestead laws other than with respect to the State of Alaska. But, as to Alaska, the homestead laws are scheduled to be repealed effective as of October 21, 1986. Ibid. Thus, the significance of this exception is minimal.

15/ See, especially, 40 U.S.C. § 759; 44 U.S.C. §§ 2904-2906; 44 U.S.C. § 3504(g); 41 C.F.R. Subpart 1-4.11; 41 C.F.R. Part 101-11 and 41 C.F.R. Subchapter F.

The implementation of an automated data processing program can of course be deterred or delayed by the appropriations process. We note in this connection that BLM's budget justifications, at page 134, for F.Y. 1983 refer to BLM land status information as an item included in the Bureau's automated data processing program for F.Y. 1983.

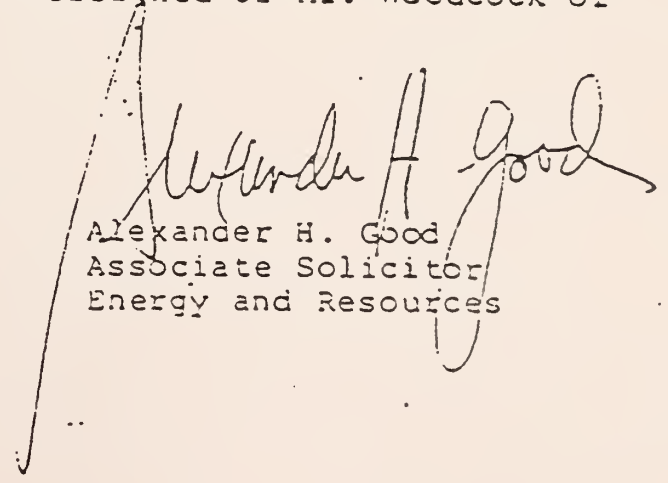
The Department's regulations at 43 CFR Subpart 1813 should be revised to reference the new land status records as part of the official BLM land status records system and to indicate that the official land status records may be stored and made available, for public information and administrative use, through a uniform automated data processing program.

Computer printouts of the official land status records normally can be expected to be admitted into evidence under the Federal Rules of Evidence, so long as a proper foundation is laid for allowing the contents of the printouts to be admitted into evidence. To secure that objective and, at the same time, to maintain public confidence in the integrity of the official records, stringent security and operational controls must be adhered to at all times with respect to an automated land status records system. In this regard, we believe the following advice, made by the trial judge in Neal v. United States, 402 F. Supp. 678, 680 (D.N.J. 1975), is well worth heeding:

"The computer is a marvelous device that can perform countless tasks at high speed and low cost, but it must be used with care. This is because it can also make errors at high speed. Those who use computers for record and accounting purposes, including the government, are accordingly obliged to operate them with suitable controls to safeguard the reliability and accuracy of the information." (emphasis added)

In closing, it should be emphasized that the preceding discussion is confined to only the BLM land status records, as contrasted to the so called "control documents" upon which in large measure the status records are based.

If we may be of further assistance in relation to this matter, please feel free to contact the undersigned or Mr. Woodcock of the Branch of Realty.


Alexander H. Good
Associate Solicitor
Energy and Resources

Appendix 14
MBO/LCM Flow Chart
June 1983

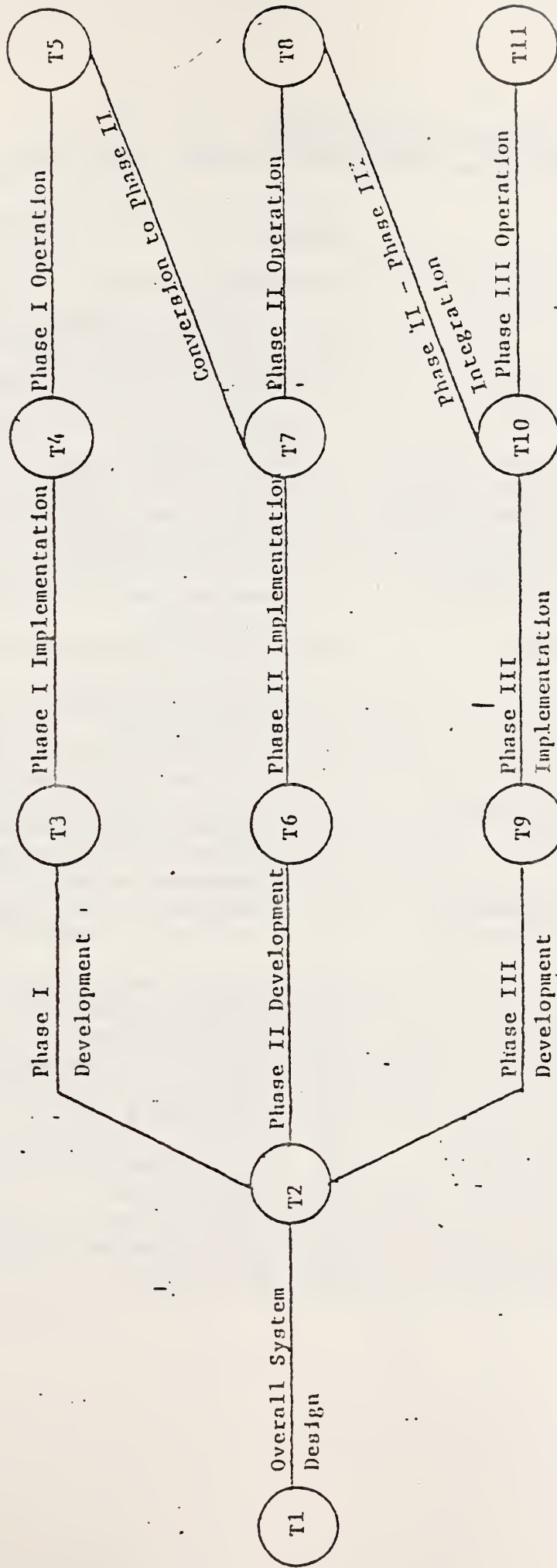


Appendix 15
ALMRS Development Plan
June 1983

ALMRS DEVELOPMENT PLAN

ALMRS is a phased development project requiring segmented implementation based upon levels of difficulty in the definitions and automation techniques necessary to satisfy user requirements. To adequately meet user needs, this project requires a dedicated workforce consisting of members from user communities representing the "Project Director", the Denver Service Center, the field (state and district offices, resource areas, etc.), and data processing personnel engaged in designing and programming the system.

ALMRS has been structured into three phases of development, first to accommodate immediate needs and then augmented to achieve the goal of fully automated land records and cartographic needs. Phase I is presently operational while phases II and III are in the "user requirements" segment of development.



SYSTEM LIFE CYCLE MANAGEMENT OUTLINE

ACTIVITIES

1. Requirements Definition
2. Requirements Analysis
3. Preliminary Survey
4. Systems Analysis
5. Feasibility Study
6. Cost/Benefit Analysis
7. System Development Planning
8. Preliminary System Integration Planning
9. Functional System Design
10. ADPE System Design
11. Acquisition
12. Data Base Design
13. Communications Design
14. Software Design
15. User Procedures Design
16. Final System Integration Planning
17. Programming
18. Unit Testing
19. System Testing
20. Quality Assurance
21. Certification
22. Installation
23. Pilot/Parallel Testing
24. Final Documentation
25. Training
26. Post-implementation Audit
27. Periodic Audit

PRODUCTS

1. Project Request
2. Preliminary Project Plan
3. Project Request Review
4. Project Control File
5. Preliminary Survey Report
6. General Functional System Requirements
7. Feasibility Study
8. Cost/Benefit Analysis
9. System Development Plan
10. Preliminary System Integration Plan
11. Detailed Functional System Requirements
12. ADPE System Specifications
13. Installation Plan
14. Acquisition Requests
15. Cost Analysis
16. Acquisition Documents
17. Data Base Specifications
18. Communications Specifications
19. Software Specifications
20. Preliminary Programmers Maintenance Manual
21. Preliminary Users Manual
22. Final System Integration Plan
23. Updated Documentation
24. Unit Test Report
25. System Test Report
26. Quality Assurance Report
27. Certification Report
28. Installation Report
29. System Implementation Report
30. Final Documentation
31. Training Plan
32. Training Report
33. Post-implementation Audit Report
34. Audit Report

SYSTEM DEVELOPMENT METHODOLOGY

~~OVERALL SYSTEM DESIGN~~

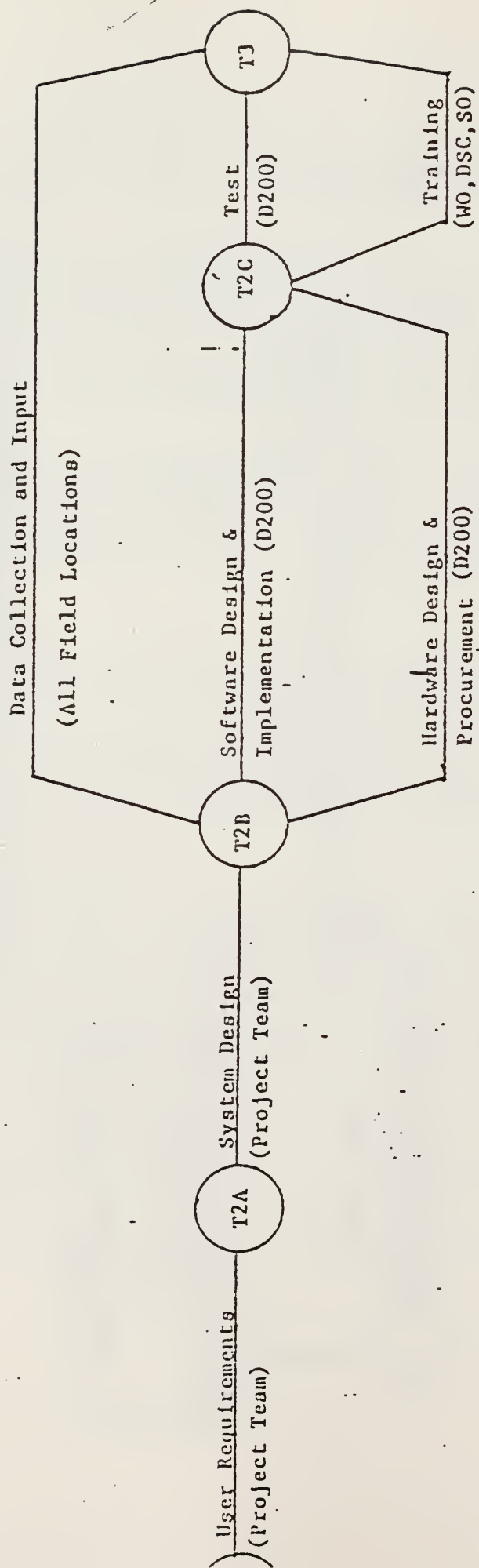
1. Project Initiation.
The idea for a new system is conceived and the general concept is agreed to by top level management.
2. Appoint Project Director (Coordinator).
A project director (coordinator) is assigned to prepare a Development Project Proposal (DPP) for the new system.
3. Prepare Development Project Proposal (DPP).
The DPP is the formal method of documenting a request for services in sufficient detail to enable management to review and evaluate the request within established constraints and within the scope of their responsibility. The requesting organization and/or the project director (coordinator) has primary responsibility for preparation of the DPP.
4. Approval. (Self Explanatory).
5. Establish Project Office.
Upon receipt of the approved DPP the project director sets up and staffs a project coordination office within the BLM WO.
6. Define Objective and General Requirements.
The project coordination office, under the project director, is responsible for defining system objectives and general requirements in sufficient detail to provide guidance to a team of technical specialists in performing further requirements and feasibility studies.
7. Appoint Technical Project Manager (TPM).
A technical project manager (TPM) is assigned to organize and direct a team of specialists assembled at one location to study, develop, design, and implement the new system. The TPM has full responsibility and authority to manage the project team in meeting the goals and objectives set forth by the project director.
8. Set Up Project Team.
The TPM, in concert with the project director, establishes a project team made up of representatives from the user community including field (states, districts, resource areas, etc.), service center (functional specialists and data processing specialists), and whatever other resources may be appropriate and/or necessary to accomplish the project.

9. Prepare Data Systems Request (DSR).
The TPM and project team are responsible for preparing the DSR which conveys the general system concepts and summarizes the estimated data processing costs/work months to data processing management.
10. Perform Present System Requirements Study.
An in-depth study and analysis of the current system or processes used is performed to satisfy user needs as they relate to the proposed system. The purpose of this study is to describe the flow of information, each organization's involvement, other organization/systems interfaces, each type of input/output document, volumes of data, response/action times, operations performed, etc.
11. Perform Proposed System Requirements Study.
An in-depth study and analysis of the proposed system is performed which describes the data flow, organizational involvement, system interfaces, type of inputs and outputs, estimated volumes, time constraints, operations required, other assumptions and constraints, etc.
12. Perform Feasibility Study.
The feasibility study elaborates on the proposed system description and presents the system and its costs in more detail and in a more technical manner. It also explains any mandatory reasons for the proposed system, describes known problems, and presents an economic evaluation summary which compares present system costs to proposed system costs and net savings and benefits achieved by implementing the proposed system.
13. Evaluate Cost Factors.
Cost factors must be presented in a clear, concise manner and include direct systems costs, intangible savings and/or costs, and costs of design and implementation. Although cost is a major element in determining the operating effectiveness of a system, a system must not be arbitrarily discarded or rejected because it is expensive. A costly system may well be the best system if it achieves stated objectives with minimum errors.
14. Walk Through. (Self Explanatory.)
15. Approval. (Self Explanatory.)

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DEVELOPMENT



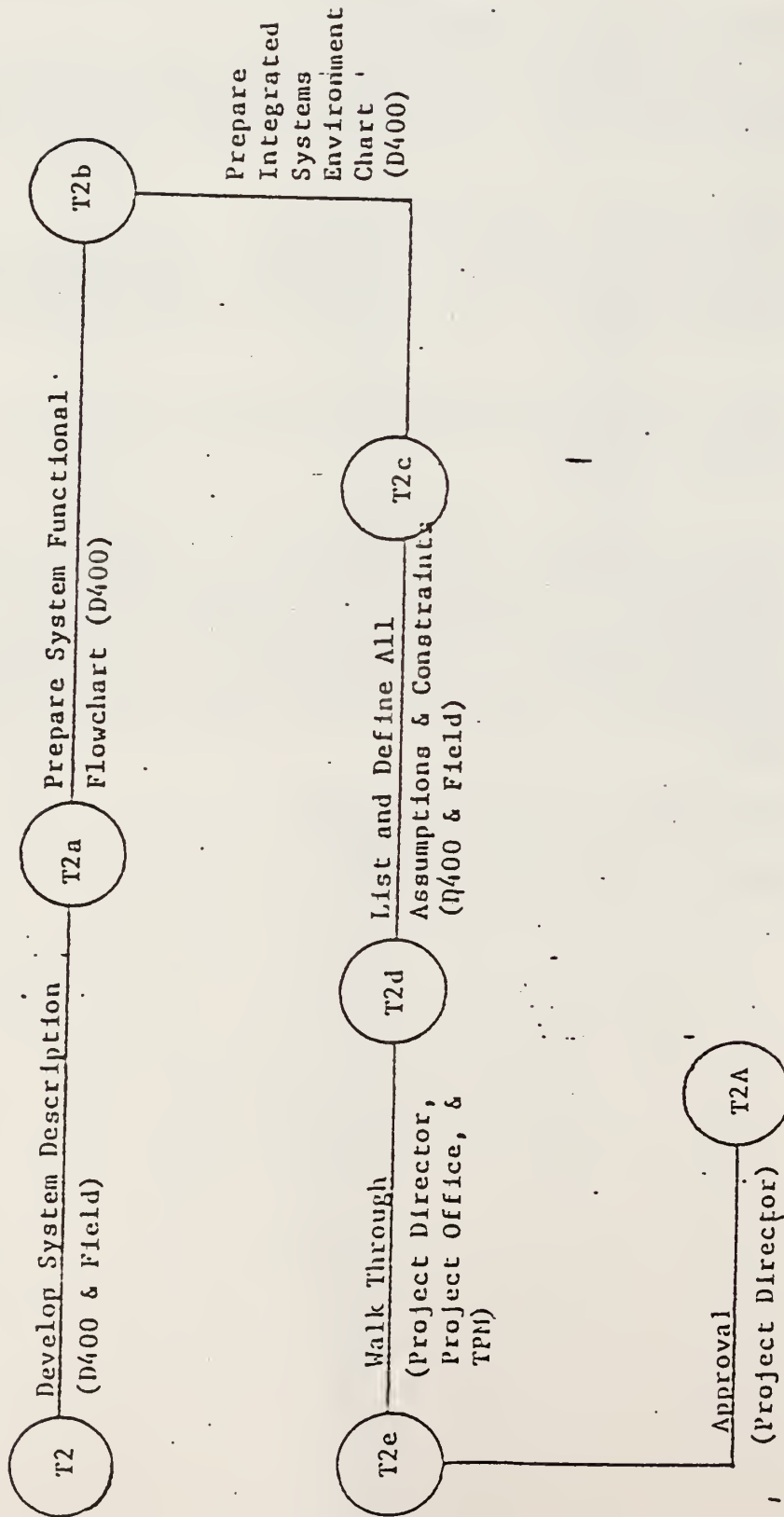
PHASE I USER REQUIREMENTS

User requirements provide a basis for mutual understanding between user and designers of the initial definition of the requirements, operating environment, development plan, and data collection requirements.

1. Develop System Description.
The system description includes a narrative outlining purpose, scope, and authorization of the system; description of all inputs and outputs; interface with other existing or planned systems; and an explanation of the system modifications or extension if appropriate.
2. Prepare System Functional Flowchart.
Graphically portrays the informational flow of the system identifying all functions, processes, procedures, and organizations. Large scale or complex systems may require several flowcharts constructed at various levels.
3. Prepare Integrated Systems Environment Chart.
Shows existing and/or proposed interfaces with other manual or automated systems.
4. List and Define all Assumptions and Constraints.
A list is prepared which identifies all conditions that cannot be supported by factual information and which spell out those circumstances or limitations upon which the system must depend. Include references to schedule constraints upon inputs and outputs, identifying files/data sets, and/or recurring processing which must be performed either prior to, or as a result of, the operation of the system.
5. Walk Through. (Self Explanatory)
6. Approval. (Self Explanatory)

PHASE I

USER REQUIREMENTS



Appendix 16

Instruction Memorandum DSC-82-135

Implementation of Automated System for Land Records

April 16, 1982



United States Department of the Interior 1260/1275 (D-480)

BUREAU OF LAND MANAGEMENT
DENVER SERVICE CENTER
DENVER FEDERAL CENTER, BUILDING 50
DENVER, COLORADO 80225

April 16, 1982

Instruction Memorandum No. DSC-82-135
Expires 9/30/83

To: All SD's

From: Service Center Director

Subject: Implementation of Automated System for Land Records

A Land Records Task Force convened in Denver April 1-2, 1982 to develop a strategy for streamlining and automating the land case management processes. That Task Force recommended that an automated system be implemented by June 1, to apply to all new applications filed in BLM State Offices. The Task Force also recommended that by August 31, all states would complete abstracting of data from all existing oil and gas lease applications on to the system. I have enclosed a copy of the recommendations of the Task Force for your information.

We are assuming the major thrust of the recommendations will be accepted by Headquarters, and are therefore scheduling training sessions for the system required for implementation by June 1. The training sessions will be held here at the Service Center in Building 50, in the Center Conference Room. The first will commence at 1:00 p.m. on Monday, May 17, and will conclude at 11:30 a.m. on May 21 for the states of Montana, Nevada, New Mexico, Oregon, and Eastern States. The second session for the remaining states will commence at 1:00 p.m. on May 24 and conclude at 11:30 a.m. on May 28.

Because of the limited space, each state will be limited to two persons for attendance. We suggest that you consider sending at least one representative who will be actually doing the entering of the lease information into the system. If you have any questions regarding details of the training session, or on arrangements for space, please contact Marty Lampman or Melva Mitchell on FTS 234-5122.

We assume implementing instructions for other items on the Task Force recommendation list will be issued by the appropriate office shortly.

1 Enclosure

Encl. 1 - Task Force Recommendations

Distribution

D-200 - 1

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PHASE I
SYSTEM DESIGN

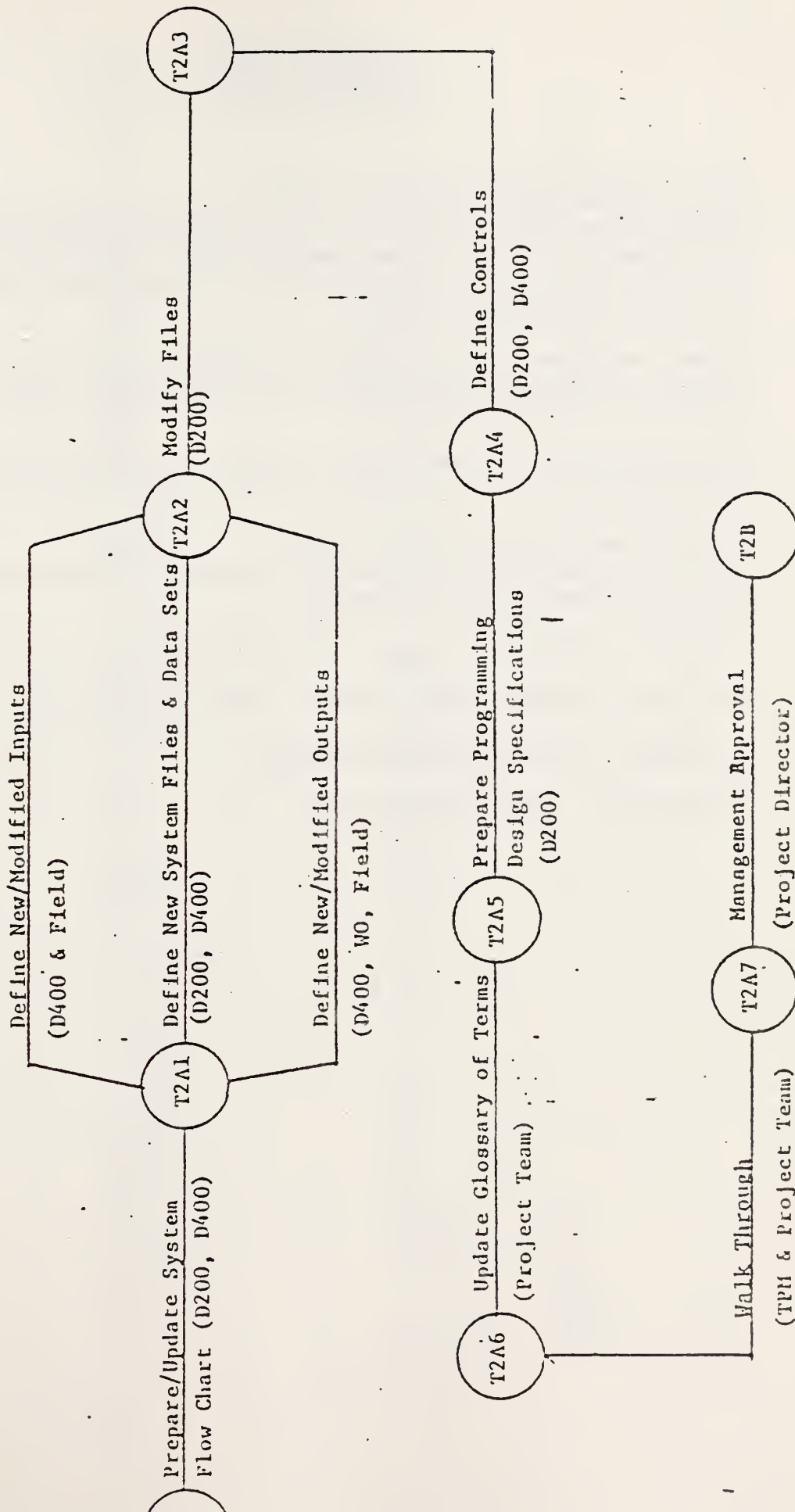
1. Update System Flow Chart.
Update the details of all functions, processes, procedures and organizations of the system. Depending upon the complexity and scope of the system, more than one flow chart may be required for various levels.
2. Design/Modify Inputs.
Inputs designed or modified may be source documents, transmittals, punched cards, paper tape, remote terminal messages, data sets/files on magnetic tape/disk, etc.
3. Design/Modify Outputs.
Outputs may be printed reports, punched cards, visual display, audio responses, magnetic tape/disk, paper tape, etc.
4. Define System Files and Data Sets.
Describe each internal output file/data set with respect to purpose, function and relationship to other system outputs. Files and data sets are utilized internally by the system.
5. Modify Files.
Consider type of file best suited to the requested application, i.e., data base, flat file, or cluster file. Define all aspects of the data, thoroughly understanding each data element. As a minimum the following factors must be considered: storage space required, timeliness of inquiry response, speed of access, maintenance, mobility, data redundancy, and user communication.
6. Define System Controls.
Identify and define, in detail, the checking, balancing, or other control procedures used by user organizations to maintain the validity of the system. Also describe, in detail, the internal processing controls required by the system including methods to provide audit trails.
7. Prepare Programming Design Specifications.
All functional program requirements should be identified including the organizational plan for each program, program description, flowcharts, sub-program or routine descriptions, and disaster recovery procedures.
8. Update Glossary of Terms.
List all new technical terms, words, phrases and abbreviations requiring further explanation and definition. Also prepare all data elements and codes for inclusion in the Data Element Dictionary (DED).

9. Walk Through. (Self Explanatory.)

10. Approval. (Self Explanatory.)

PHASE 1

SYSTEM DESIGN



PHASE I
HARDWARE DESIGN
AND PROCUREMENT

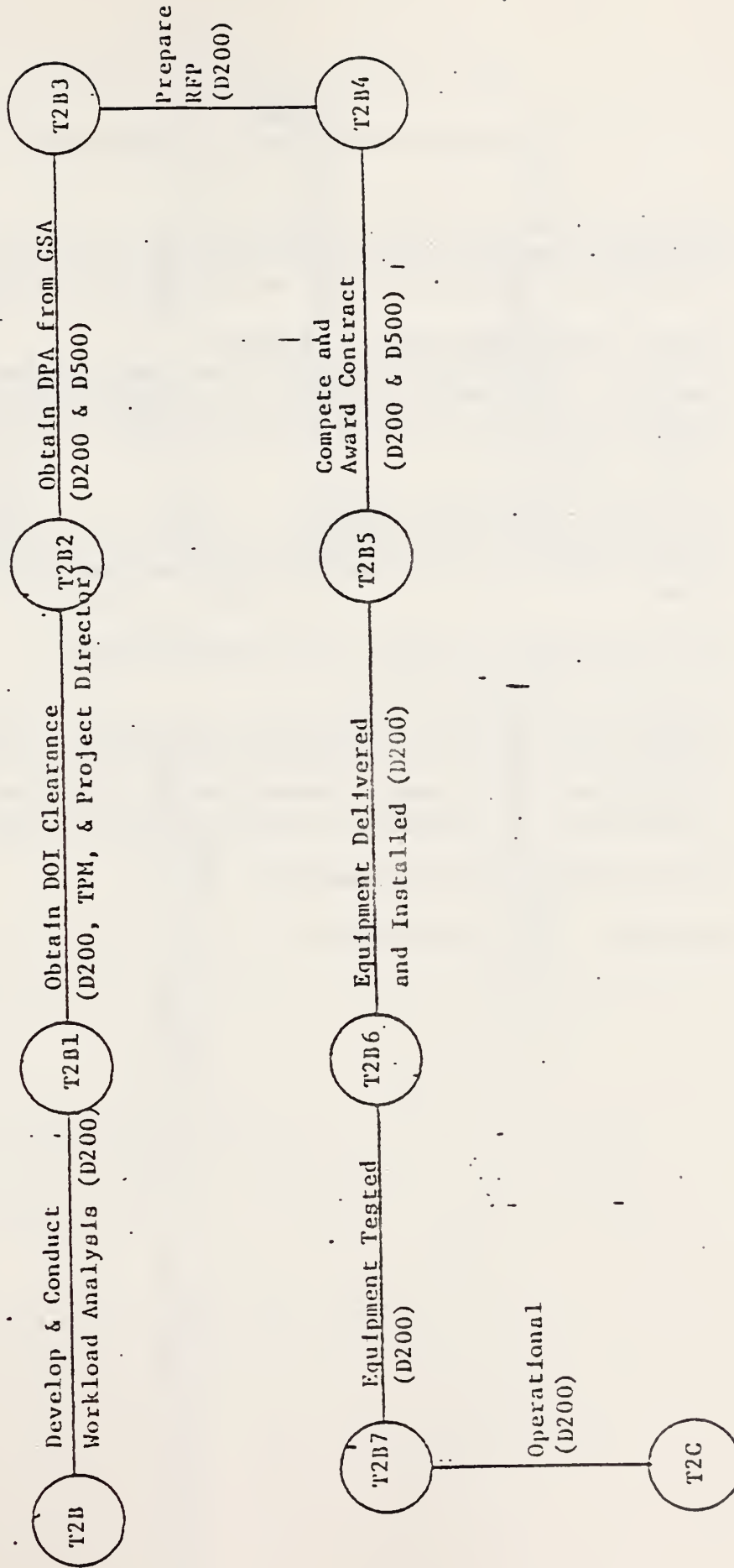
Develop and Conduct Workload Analysis.

The data processing organization is responsible for translating user requirements, data base/files design, and programming design specification into a workload analysis which results in determination of required procurement documentation and strategies necessary to support the proposed system. _

2. Obtain Department of Interior (DOI) Clearance.
Prior to release of RFP, approval must be obtained from the appropriate DOI office(s).
3. Obtain Delegation of Procurement Authority (DPA) from GSA.
By regulation.
4. Prepare Request for Proposal (RFP).
Based upon the information derived from the workload analysis, an RFP must be prepared for solicitation.
5. Compete and Award Contract. (Self Explanatory).
6. Equipment Delivered and Installed. (Self Explanatory).
7. Equipment Tested. (Self Explanatory).
8. Operational. (Self Explanatory).

PHASE 1

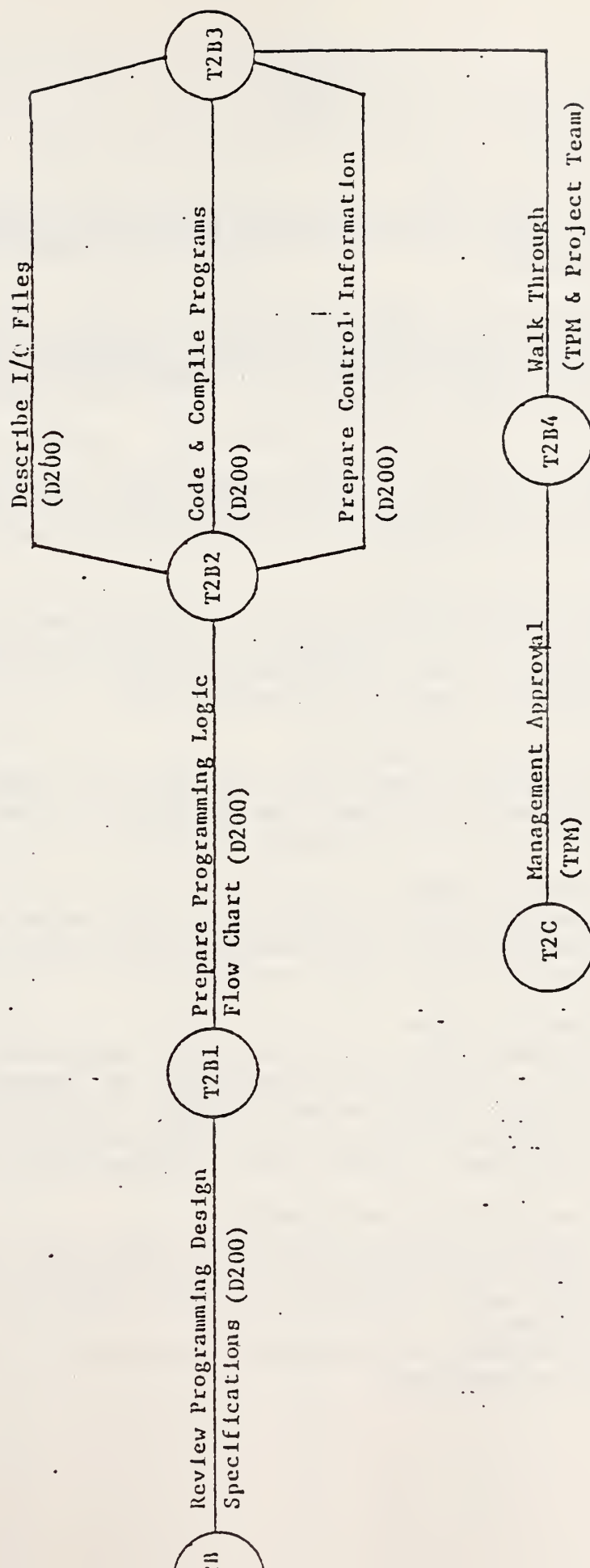
HARDWARE DESIGN & PROCUREMENT



PHASE I
SOFTWARE DESIGN AND IMPLEMENTATION

1. Review Programming Design Specifications.
Programmer reviews specifications and discusses with analyst, resolving any misunderstanding or differences of opinion.
2. Prepare Programming Logic Flow Chart.
Diagram the sequence of operations and decisions performed by the computer. Each symbol must describe a single program instruction, process, function, or stand alone procedure and must precisely follow program logic.
3. Describe Input/Output Files.
Specify standard label formats, the data organization for each input/output file, applicable sorting sequence in major to minor order.
4. Code and Compile Programs. (Self Explanatory).
5. Prepare Control Information.
Controls are a series of explanatory paragraphs defining how program controls imposed on inputs and/or outputs operate, including such controls as record counts, accumulated counts, batch controls, data transmission in, through, and out of the system, etc.
6. Walk Through. (Self Explanatory.)
7. Approval. (Self Explanatory.)

SOFTWARE DESIGN & IMPLEMENTATION



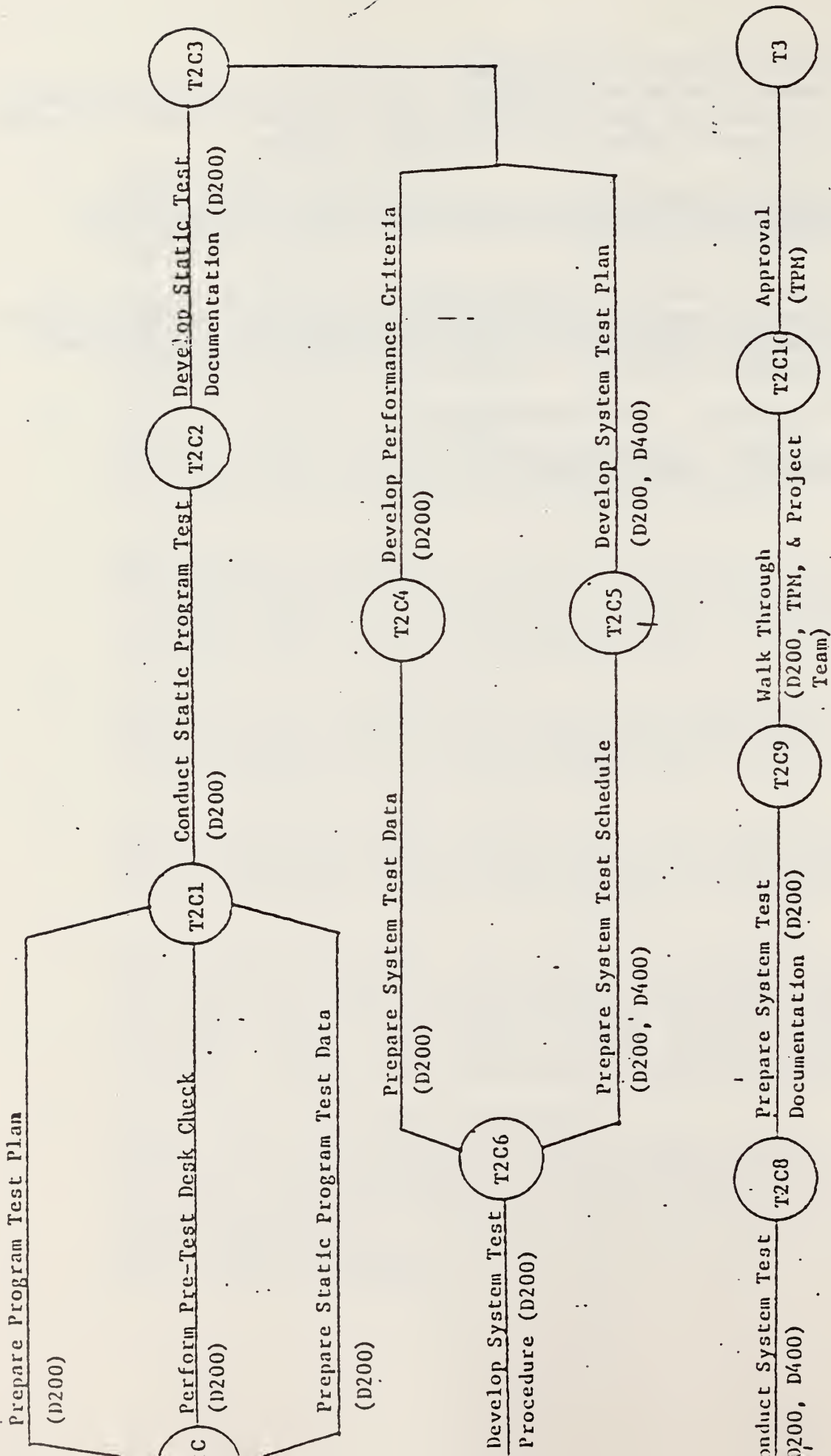
PHASE I
TEST

1. Prepare Static Test Plan.
Develop a test plan for checking programs or program segments as appropriate. These tests are conducted by the programmer during program development.
2. Perform Pre-Test Desk Checks.
Checks are made for initialization logic, termination logic, file handling logic, report generation and processing logic to reduce the likelihood of abnormal termination.
3. Prepare Static Program Test Data.
Develop test data to set up sample transactions, test files and/or data bases, that will adequately test the program. Use sufficient data to assure all portions of the program are tested.
4. Conduct Static Program Test.
Each program written will be tested by the programmer upon completion of coding and syntax free compilation to assure functioning according to specifications. Test all program input types, generate all output types, and execute every line of program code.
5. Prepare Static Test Documentation.
Describe all test data used, each input media used, each output product generated, and a summary narrative of the results including a brief description of any debugging performed.
6. Develop System Performance Criteria.
Specify acceptable limits or error ratios which serve as quality control specification for all conditions in the system including control, processing, and output test criteria.
7. Develop System Test Plan.
When all programs within a system have been individually tested a plan for conducting a system test is developed. The system test re-tests all program logic, inputs, outputs, cycling capability, and validity of system interfaces. The system test must closely simulate actual production conditions, and users must be extensively involved.
8. Prepare System Test Data and Schedule.
Prepare a test data file for each master, table, and input file used. Test data files must include all error conditions, all I/O functions, check point and restart procedures, no-data conditions, and any special requirements.
Prepare test schedule which specifies how testing will progress and when it will be completed.

9. Develop System Test Procedures.
Prepare step by step procedures including all organizational units performing assigned tasks in sequence pecified to insure the system will operate efficiently with minimal problems.
10. Conduct System Test.
Conduct total system test which very closely simulates actual production conditions.
11. Prepare System Test Documentation.
Provide a complete description of all inputs used, outputs generated, debugging performed, and a narrative summary of the conduct and results of the test.
12. Walk Through. (Self Explanatory.)
13. Approval. (Self Explanatory.)

PHASE I

TEST

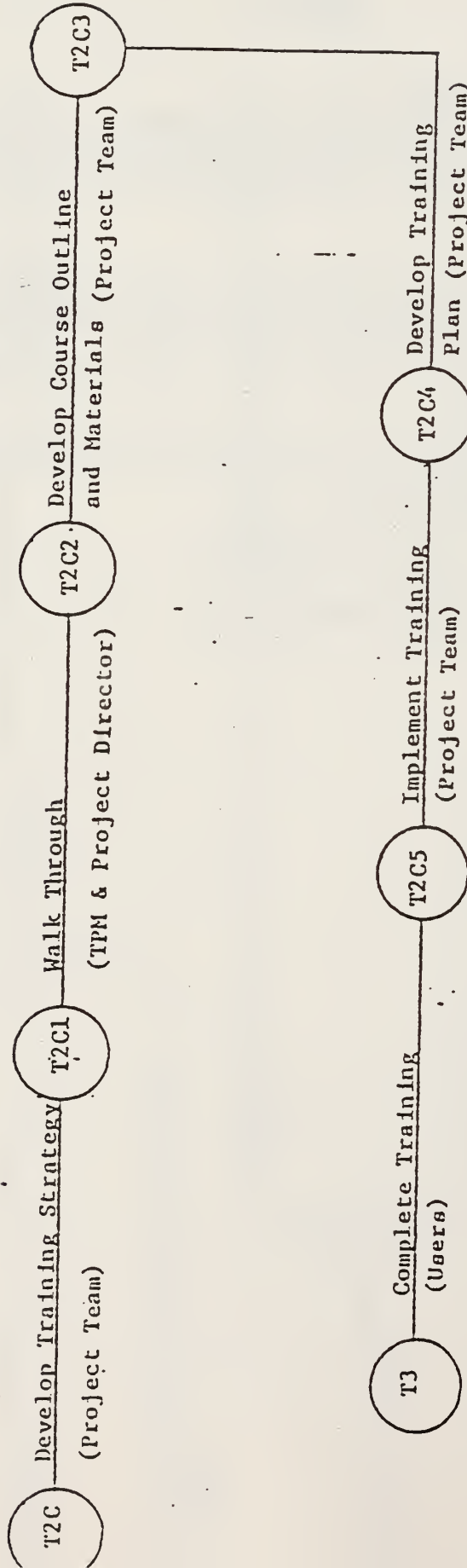


PHASE I
TRAINING

1. Develop Training Strategy.
The project team, in coordination with applicable training personnel and other offices as may be required, will design and develop strategy for training all users and interested persons in using and interacting with the system.
2. Walk Through.
Prior to further training development, a walk through of the strategy developed must be completed by the TPM and Project Director.
3. Develop Course Outline and Materials. (Self Explanatory)
4. Develop Training Plan.
A detail plan and schedule must be prepared which reflects all immediate and planned training.
5. Implement Training. (Self Explanatory).
6. Complete Training. (Self Explanatory).

PHASE 1

TRAINING

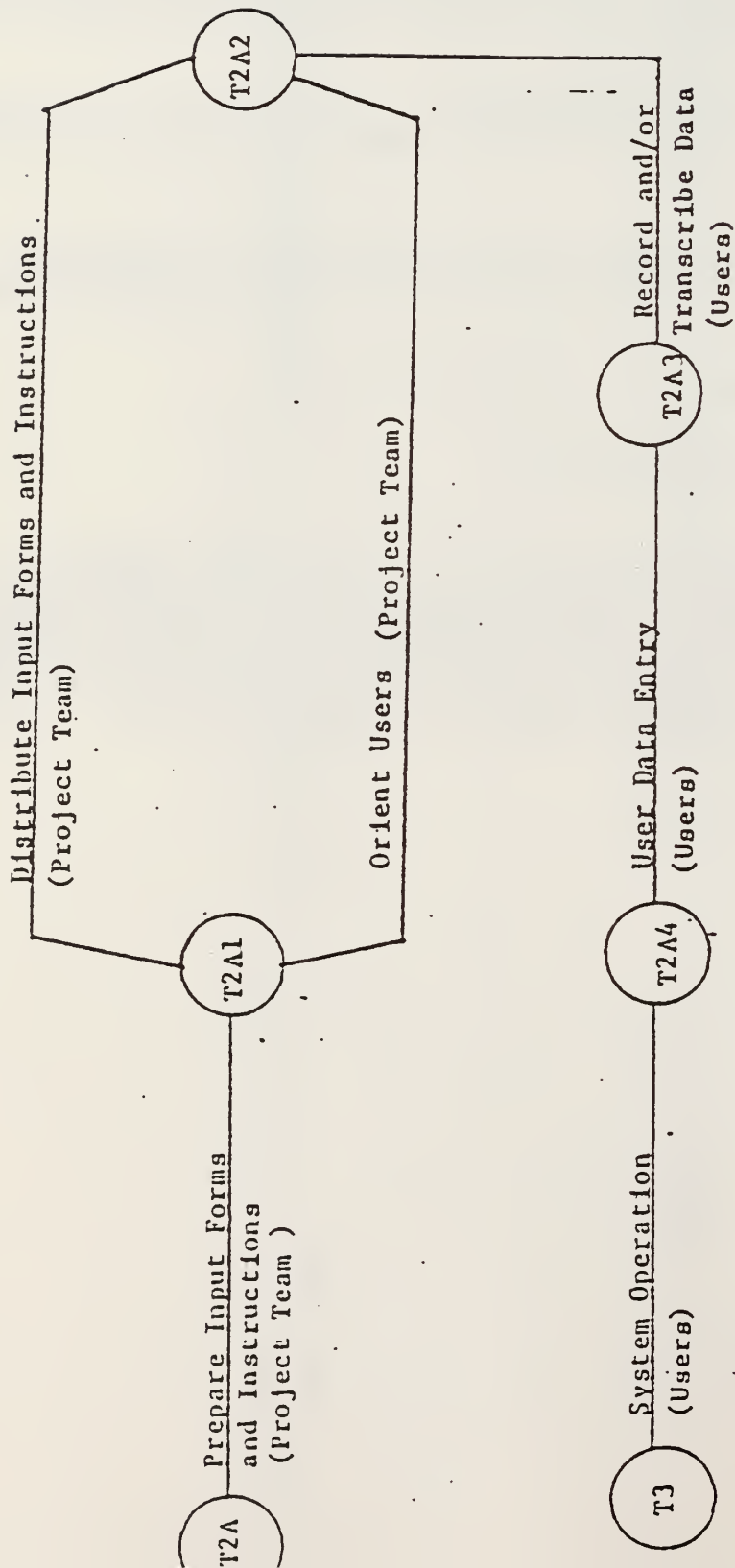


PHASE I
DATA COLLECTION

1. Prepare Input Forms and Instructions.
Data collection forms and instructions for their use must be developed which include all the data necessary for input to the system and which are designed to accommodate the personnel responsible for preparation as well as data entry personnel.
2. Distribute Input Forms and Instructions.
Source documents must be distributed to all users and data collection sources.
3. Orient Users.
All personnel responsible for data recording and/or data entry must receive guidance in the proper procedures and coding required to input data to the system.
4. Record and/or Transcribe Data. (Self Explanatory).
5. User Data Entry. (Self Explanatory).
6. System Operation.
The system may operate in any of three modes: On-line - direct terminal communication with computer on a time sharing basis; Remote Job Entry (RJE) - direct terminal communication with computer with processing deferred until computer resources are available; Production (Batch) - recurring processing of relatively large requirements during periods when on-line usage of computer resources is low or non-existent.

PHASE 1

DATA COLLECTION



PHASE I
SYSTEM IMPLEMENTATION

1. Load Data Base.
Data loading to data base/files is accomplished upon completion of training and during the later stages of system testing. This is considered the initial load and is normally accomplished in a batch mode.
2. Transfer System to Production Status.
When the test phase is completed and approved the system/programs and its documentation are transferred to a production status. All information necessary to run the system in production is turned over to the data processing Production Control.
3. Establish Processing Schedule.
This is done in the most effective and efficient manner possible with the constraints of manpower, computer resources, and other processing requirements.
4. Establish Processing Priorities.
While the goal is to provide good and reasonable service to all systems users, the workload and user expectations will sometimes exceed the capability of the system to respond in a timely and/or satisfactory manner. It therefore becomes necessary to establish operating policies which govern system utilization and allocation among various users and functions.
5. Establish Production Job Control Management.
Pre and post processing procedures specifically related to production processing, documentation required, and controls exercised.
6. Establish Computer Processing Job Management.
Computer operation procedures specifically related to production processing, documentation required, and controls exercised.
7. Establish Data Entry Job Management.
Procedures outlined pertain specifically to centralized data entry. Procedures for remote decentralized terminal entry are defined in system user manuals.
8. Establish System/Program Recovery File Management.
Reprocessing of data will be provided by maintaining a backup of systems, software, programs, data files, and data base programs and files. While it is possible to maintain a backup for reprocessing in a majority of cases, a complete backup to provide for all situations, for extended periods, is not feasible.

9. Establish Security Procedures.

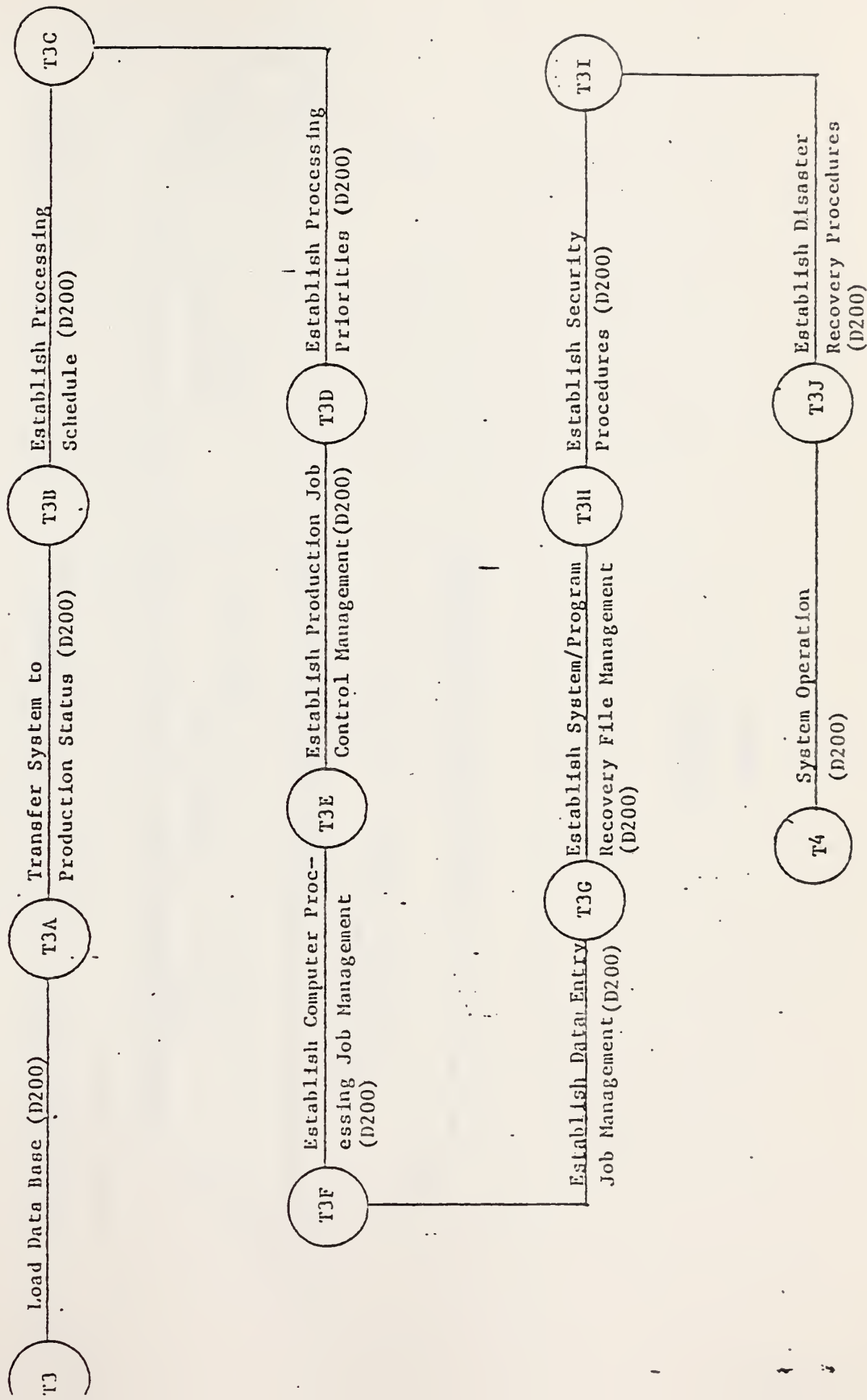
The assessment of the security risk must take into account the administrative, technical, and physical environments in which the system operates and which will become part of the overall security action plan. Physical security, information management security and computer systems security are essential and integral elements of the action plan.

10. Establish Disaster Recovery Procedures.

Disaster recovery provides the data, software, hardware, and personnel needed to produce essential outputs if the computer center has been rendered inoperative. This is accomplished through data and program backup, off premises storage, and a well developed action plan.

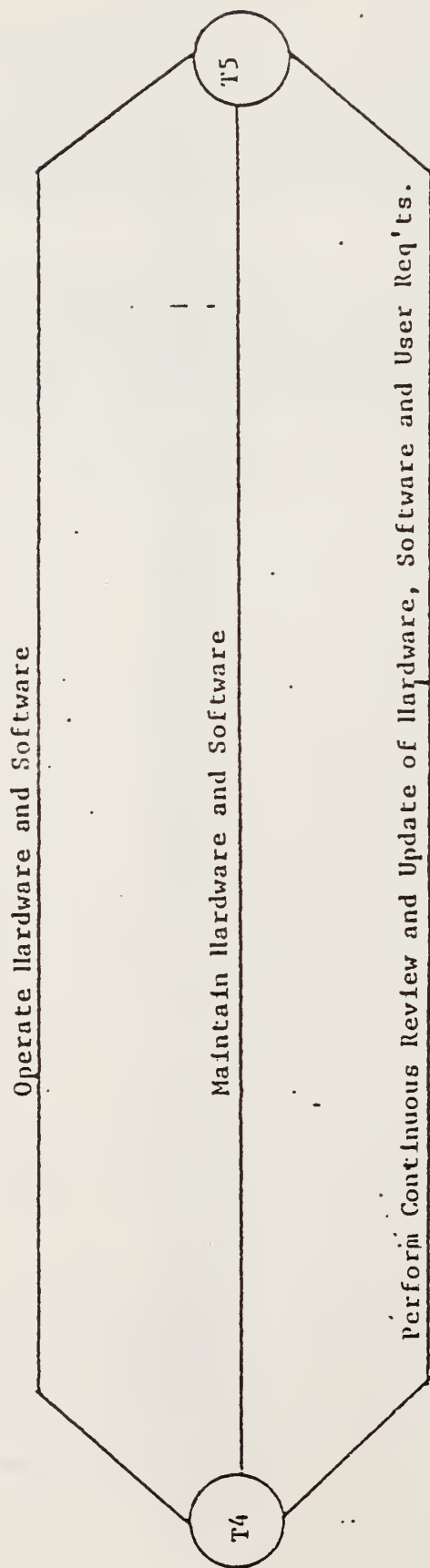
11. System Operation. (Self Explanatory).

PHASE I SYSTEM IMPLEMENTATION



PHASE I

OPERATION



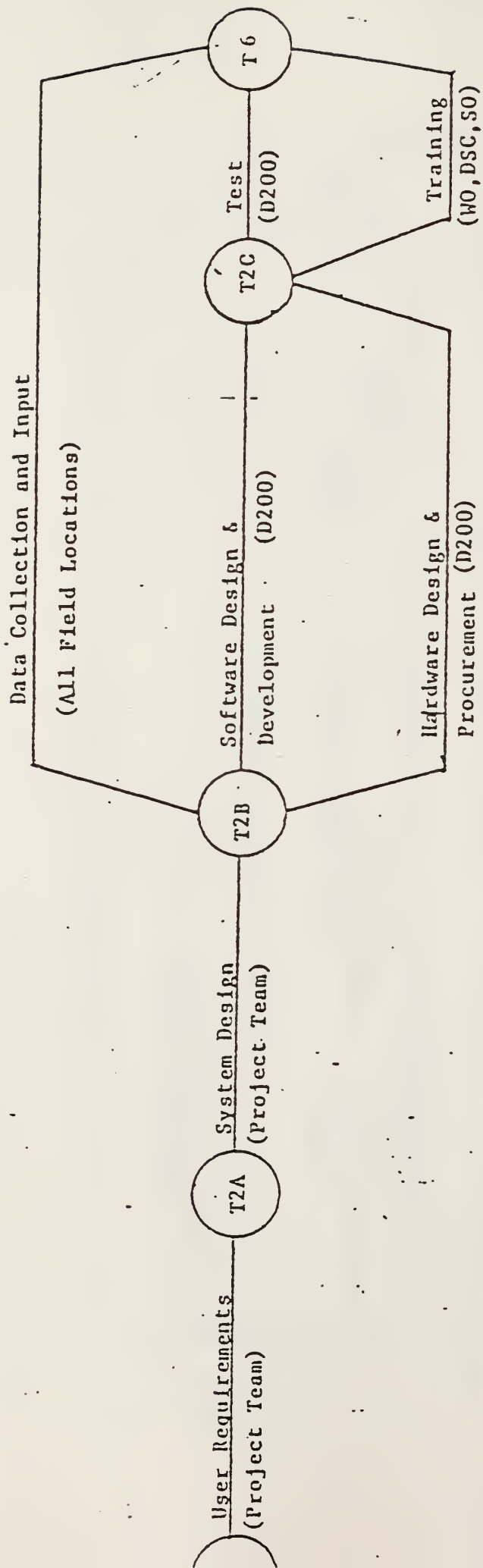
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graph TD
    T5((T5)) -- "Prepare Phase I Data  
Conversion Plan  
(Project Team)" --> T5A((T5A))
    T5A -- "Code and Compile  
Programs (D200)" --> T5B((T5B))
    T5B -- "Conduct Static Program  
Tests (D200)" --> T5C((T5C))
    T5C --> T5D((T5D))
    T5D -- "Clean-Up Data  
Files (D200, D400)" --> T5E((T5E))
    T5E --> T7C((T7C))
    T7C -- "Phase I to Phase II  
Integration (D200)" --> T5
  
```

The flowchart illustrates the Project Team's work process, starting with Task T5 (Prepare Phase I Data Conversion Plan) and ending with Task T7C (Phase I to Phase II Integration). The process involves several intermediate tasks (T5A through T5E) and feedback loops (T5B to T5C, T5C to T5D, T5D to T5E, and T7C back to T5).

PHASE II

DEVELOPMENT



PHASE II USER REQUIREMENTS

User requirements provide a basis for mutual understanding between users and designers of the initial definition of the requirements, operating environments, development plan and data collection requirements.

1. Develop System Description.

The system description includes a narrative outlining purpose, scope, and authorization of the system, description of all inputs and outputs, interface with other existing or planned systems, and an explanation of the system modifications or extension if appropriate.

2. Prepare System Functional Flowchart.

Graphically portrays the informational flow of the system identifying all functions, processes, procedures, and organizations. Large scale or complex systems may require several flowcharts constructed at various levels.

3. Prepare Integrated Systems Environment Chart.

Shows existing and/or proposed interfaces with other manual or automated systems.

4. List and Define all Assumptions and Constraints.

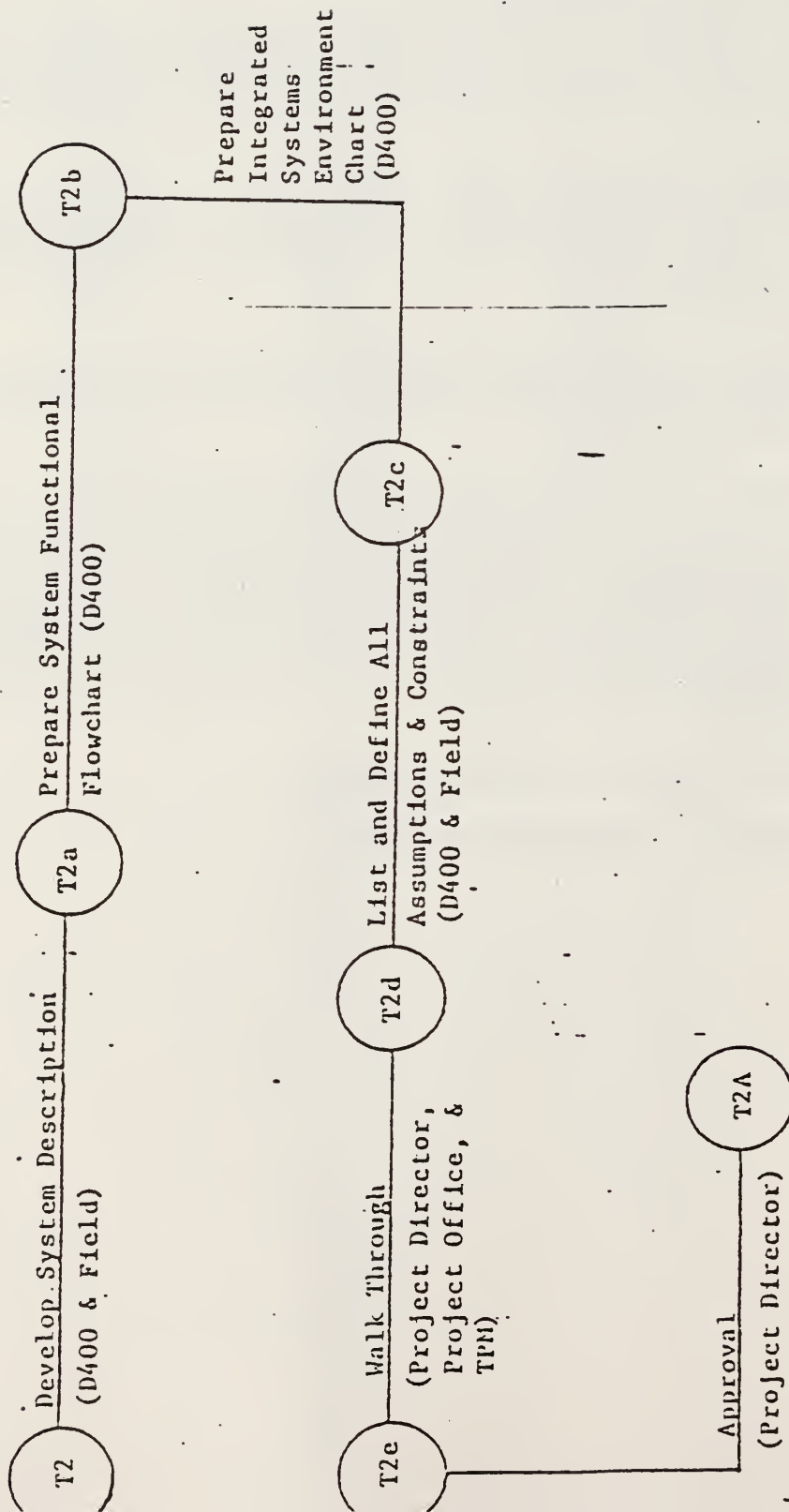
A list is prepared which identifies all conditions that cannot be supported by factual information and which spell out those circumstances or limitations upon which the system must depend. Include reference to schedule constraints upon inputs and outputs, identifying files/data sets, and/or recurring processing which must be performed either prior to, or as a result of, the operation of the system.

5. Walk Through. (Self Explanatory).

6. Approval. (Self Explanatory).

PHASE II

USER REQUIREMENTS



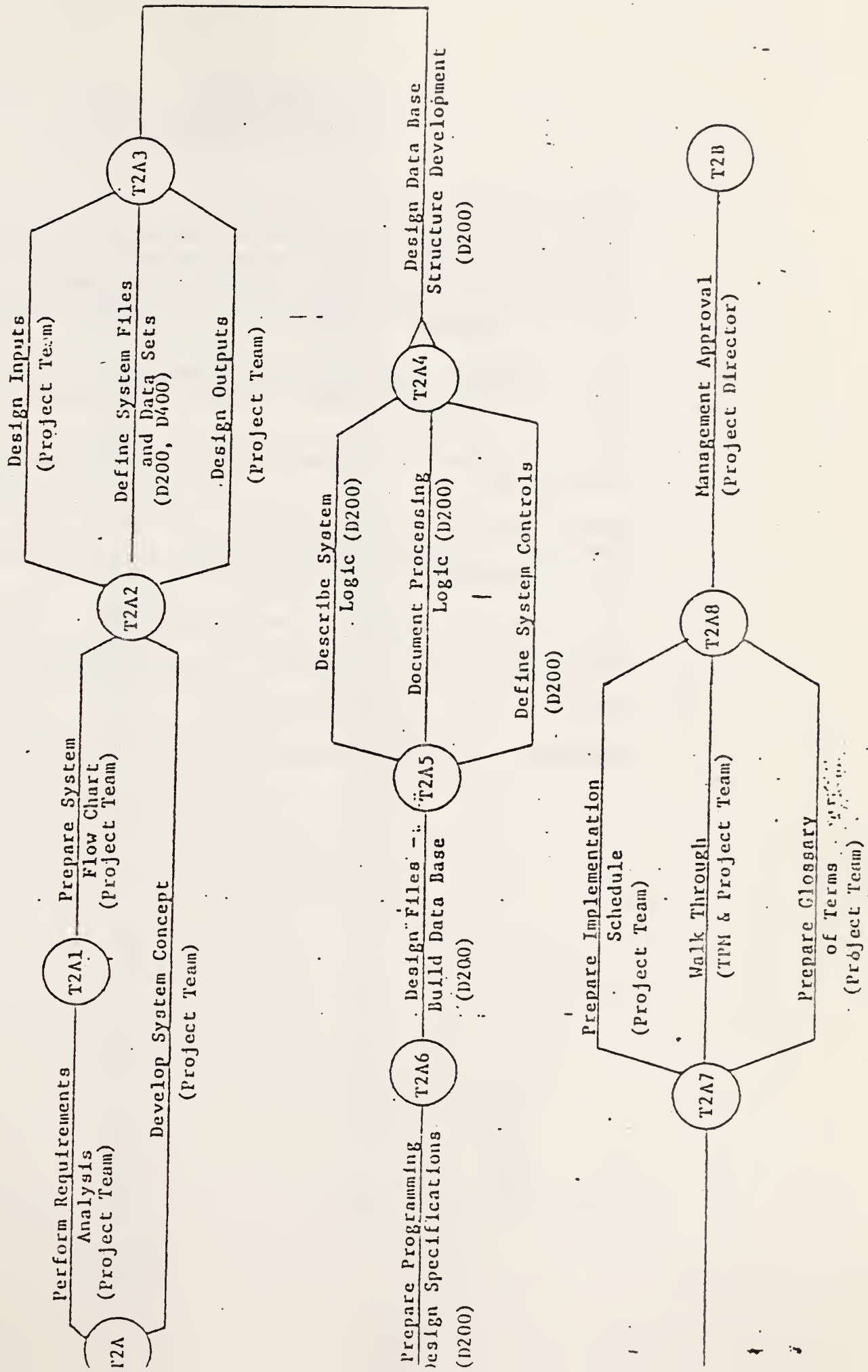
PHASE II SYSTEM DESIGN

1. Perform Requirements Analysis
Determine feasibility of the user's requirements by thoroughly studying the user's system specifications, analyzing all elements of the system to assure understanding and ADP applicability. Discuss those elements which need clarification, modification, or which cannot be accomplished as requested.
2. Develop System Concept.
Develop a detailed narrative description of the functions, processes, procedures and organization of the system, showing all actions and interactions within the system and interfaces with other systems.
3. Prepare System Flow Chart.
Graphically portray the details of all functions, processes, procedures and organizations of the system. Depending upon the complexity and scope of the system, more than one flowchart may be required for various levels.
4. Design Inputs.
Inputs designed may be source documents, transmittals, punched cards, paper tape, remote terminal messages, data sets/files on magnetic tape/disk, etc.
5. Design Outputs.
Outputs may be printed reports, punched cards, visual displays, audio responses, magnetic tape/disk, paper tape, etc.
6. Define System Files and Data Sets.
Describe each internal output file/data set with respect to purpose, function and relationship to other system outputs. Files and data sets are utilized internally by the system.
7. Develop Data Base Structure.
A data base provides the means to connect data elements in such a manner that it is possible to selectively access one or more elements while simultaneously eliminating data redundancy and I/O processing of elements that are irrelevant to the task at hand.
8. Describe System Logic.
Describe the methods and procedures required by the system defining and documenting all edits, conditions, logical relationships, techniques, etc. Graphic illustrations, charts, formulas, etc., should be used when necessary.

9. Define System Controls.
Identify and define, in detail, the checking, balancing, or other control procedures used by user organizations to maintain the validity of the system. Also, describe, in detail, the internal processing controls required by the system including methods to provide audit trails.
10. Document Processing Logic.
Describe computer processing logic which includes functional flowcharts, complete program descriptions and interrelationships, and detail plans or programs for data file/set conversions required for parallel processing or final production implementation.
11. Design Files.
Consider type of file best suited to the requested application, i.e., data base, flat file, or cluster file. Define all aspects of the data, thoroughly understanding each data element. As a minimum the following factors must be considered: storage space required, timeliness of inquiry response, speed of access, maintenance, mobility, data redundancy, and user communication.
12. Prepare Programming Design Specification.
All functional program requirements should be identified including the organizational plan for each program, program description, flowcharts, sub-program or routine descriptions, and disaster recovery procedures.
13. Prepare Implementation Schedule.
Specify due dates for system implementation, data input and data output. Also, show estimated dates for completion of the Operations Manual (Run Book), Program Maintenance Manual and User's Manual (Guide).
14. Prepare Glossary of Terms.
List all technical terms, words, phrases and abbreviations requiring further explanation and definition. Also, prepare all data elements and codes for inclusion in the Data Element Dictionary (DED).
15. Walk Through. (Self Explanatory.)
16. Approval. (Self Explanatory.)

PHASE II

SYSTEM DESIGN

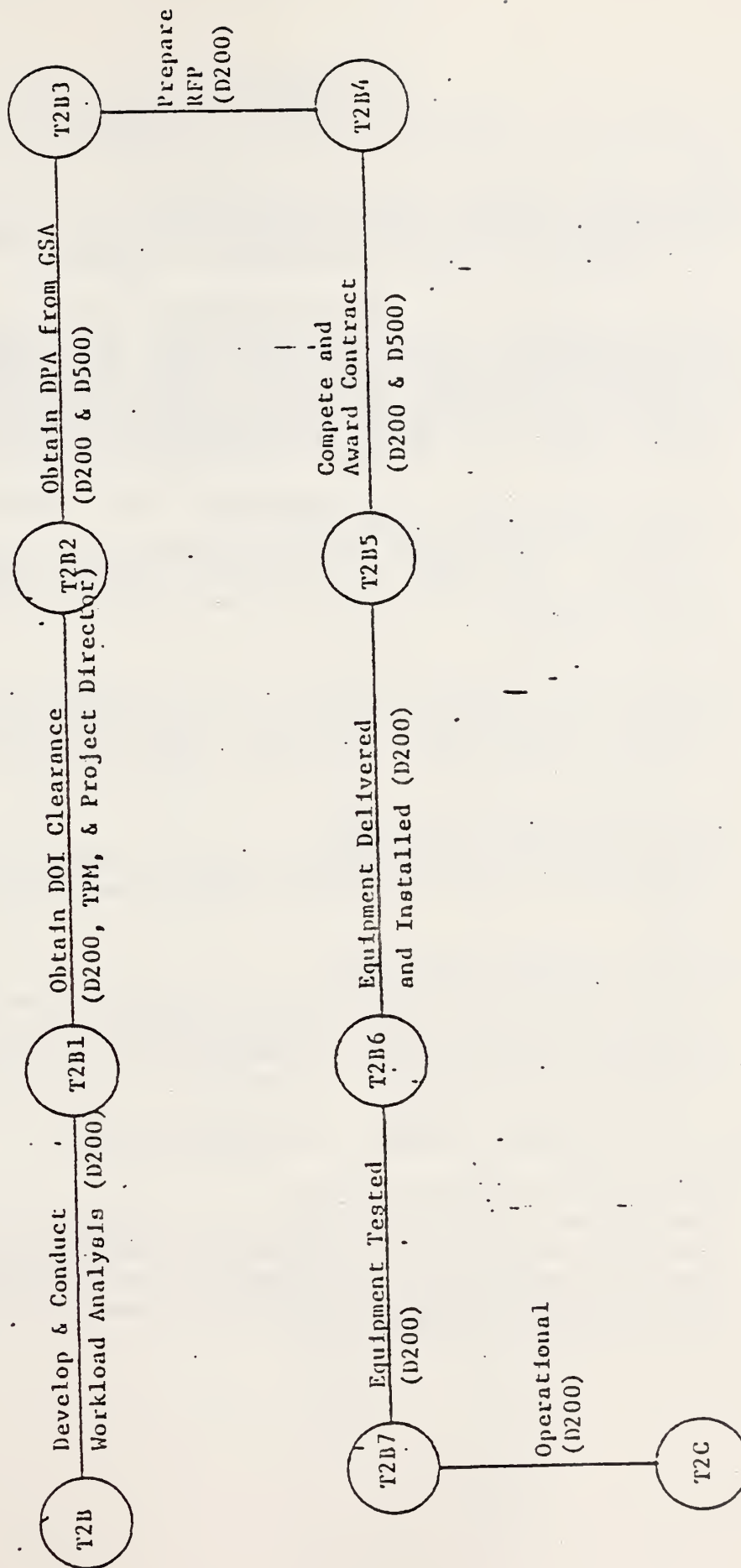


PHASE II
HARDWARE DESIGN
AND PROCUREMENT

1. Develop and Conduct Workload Analysis.
The data processing organization is responsible for translating user requirements, data base/files design, and programming design specifications into a workload analysis which results in determination of required procurement documentation and strategies necessary to support the proposed system.
2. Obtain Department Of Interior (DOI) Clearance.
Prior to release of RFP, approval must be obtained from the appropriate DOI office(s).
3. Obtain Delegation of Procurement Authority (DPA) from GSA.
By regulation.
4. Prepare Request for Proposal (RFP).
Based upon the information derived from the workload analysis, an RFP must be prepared for solicitation.
5. Compete and Award Contract. (Self Explanatory).
6. Equipment Delivered and Installed. (Self Explanatory).
7. Equipment Tested. (Self Explanatory).
8. Operational. (Self Explanatory).

PHASE II

HARDWARE DESIGN & PROCUREMENT



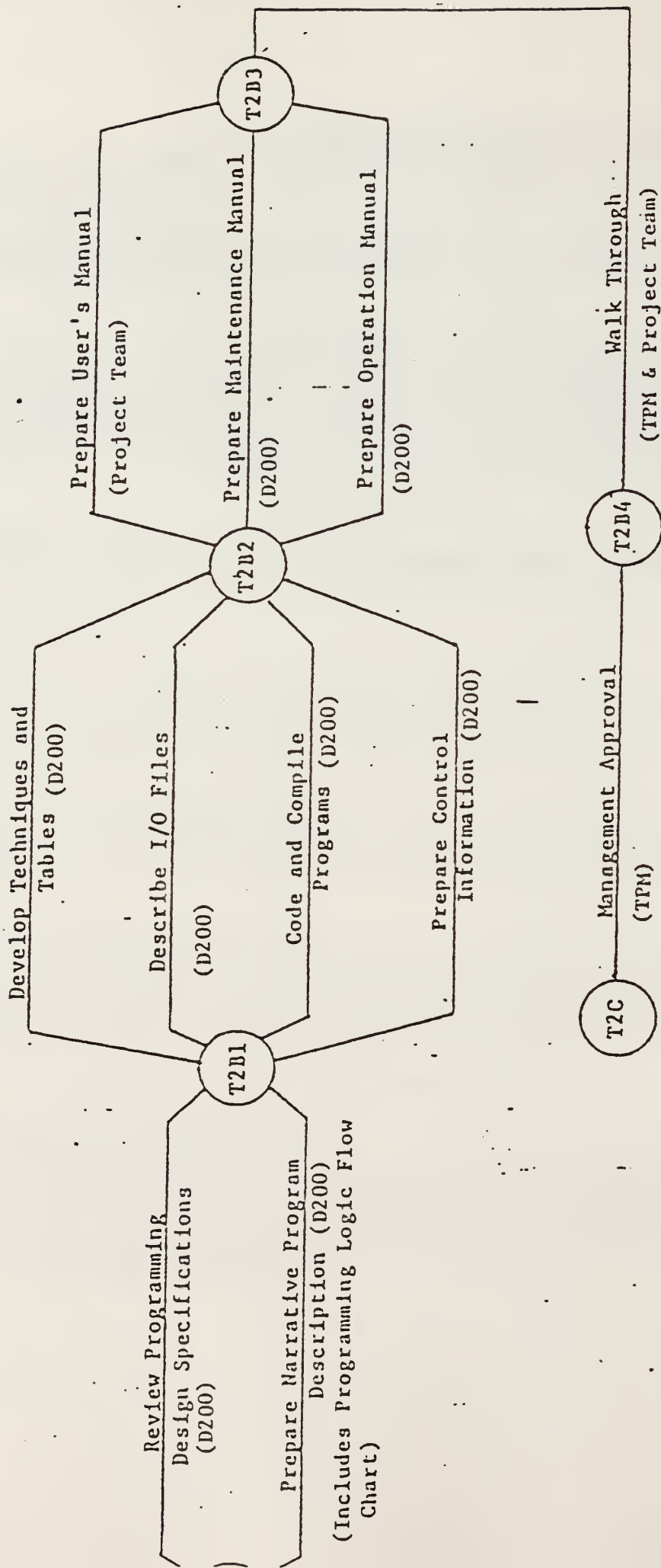
PHASE II
SOFTWARE DESIGN AND IMPLEMENTATION

1. Review Programming Design Specifications.
Programmer reviews specifications and discusses with analyst resolving any misunderstanding or differences of opinion.
2. Prepare Narrative Program Description.
Briefly describe, in non-technical terms, the program's major functions, procedures, special features, and equipment requirements. Show system name, program name and number, analyst and programmer names, forms of input and output expected, objectives of program, etc. Explain any tables, if used, and indicate system controls.
3. Prepare Programming Logic Flow Chart.
Diagram the sequence of operations and decisions performed by the computer. Each symbol must describe a single program instruction, process, function, or stand alone procedure and must precisely follow program logic.
4. Develop Techniques and Tables (as may be required).
Used only for complex programs with specialized requirements for such items as complex table structures, special search techniques, randomizing formulae, special access formulae, etc.
5. Describe Input/Output Files.
Specify standard label formats, the data organization for each input/output file, applicable sorting sequence in major to minor order.
6. Prepare Control Information.
Controls are a series of explanatory paragraphs defining how program controls imposed on inputs and/or outputs operate, including such controls as record counts, accumulated counts, batch controls, data transmission in, through, and out of the system, etc.
7. Code and Compile Programs. (Self Explanatory.)
8. Prepare User's Manual (Guide).
The purpose of the user's guide is to sufficiently describe the functions performed by the software in non-ADP terminology such that the user organization can determine its applicability and when and how to use it. It serves as a reference document for preparation of input data, parameters, and results.

9. Prepare Operations Manual (Run Book).
The Operations Manual provides instructions to be used by operating personnel in scheduling, setting up, and running a given job. The manual specifically defines processing functions and responsibilities with respect to programs and control procedures. The manual or appropriate chapters therein generally describes one production job stream which usually includes more than one program.
10. Prepare Program Maintenance Manual.
The Program Maintenance Manual provides the maintenance programmer with information necessary to understand the programs, their operating environment, and their maintenance procedures. The manual or appropriate chapters therein describes one production job stream which usually includes more than one program.
11. Walk Through. (Self Explanatory.)
12. Approval. (Self Explanatory.)

PHASE II

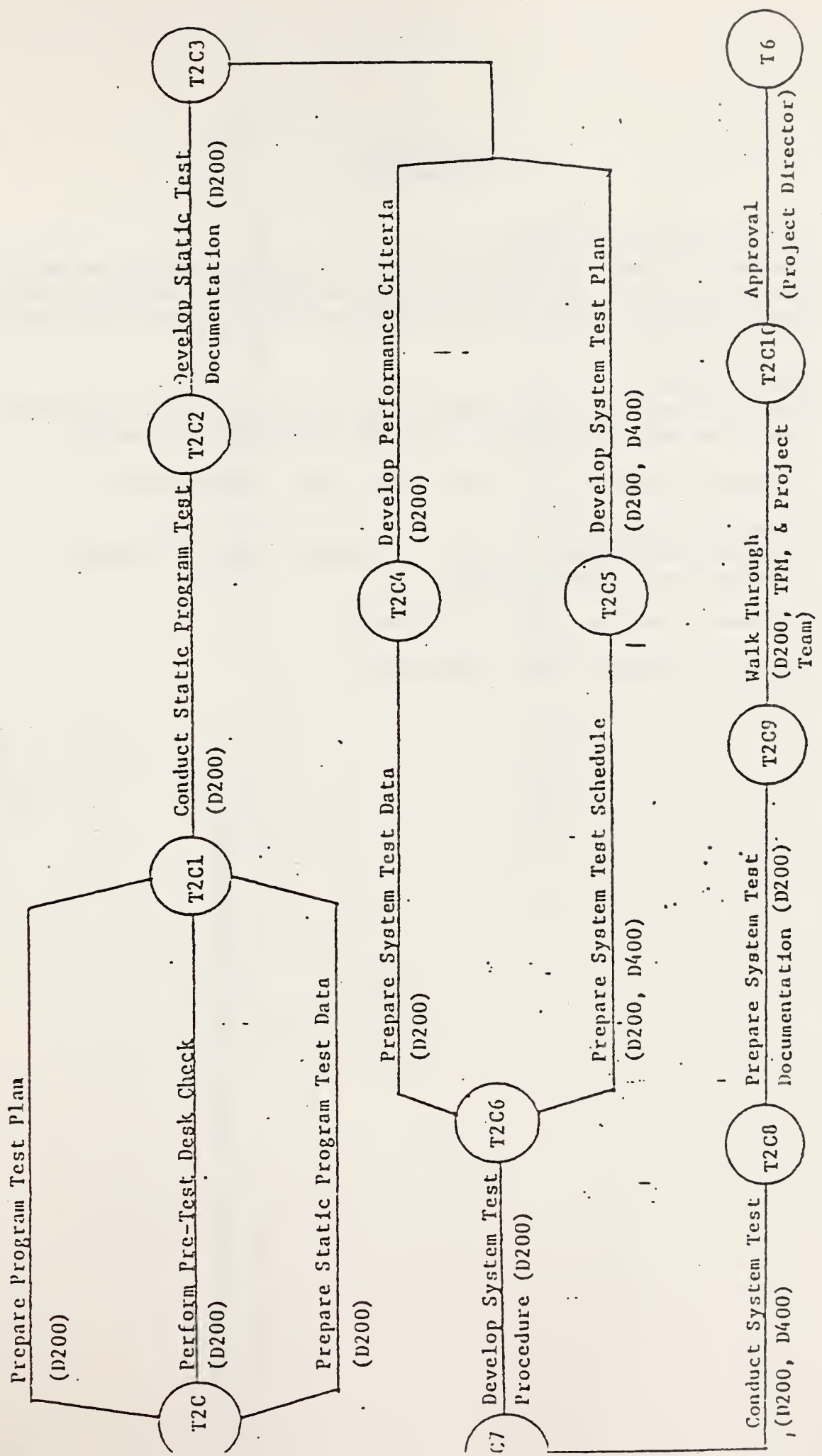
SOFTWARE DESIGN AND IMPLEMENTATION



PHASE II
TEST

1. Prepare Program Test Plan.
Develop a test plan for checking programs or program segments as appropriate. These tests are conducted by the programmer during program development.
2. Perform Pre-Test Desk Checks.
Checks are made for initialization logic, termination logic, file handling logic, report generation and processing logic to reduce the likelihood of abnormal termination.
3. Prepare Static Program Test Data.
Develop test data to set up sample transactions, test files and/or data bases, that will adequately test the program. Use sufficient data to assure all portions of the program are tested.
4. Conduct Static Program Test.
Each program written will be tested by the programmer upon completion of coding and syntax free compilation to assure functioning according to specifications. Test all program input types, generate all output types, and execute every line of program code.
5. Prepare Static Test Documentation.
Describe all test data used, each input media used, each output product generated, and a summary narrative of the results including a brief description of any debugging performed.
6. Develop System Performance Criteria.
Specify acceptable limits or error ratios which serve as quality control specification for all conditions in the system including control, processing and output test criteria.
7. Develop System Test Plan.
When all programs within a system have been individually tested a plan for conducting a system test is developed. The system test re-tests all program logic, inputs, outputs, cycling capability, and validity of system interfaces. The system test must closely simulate actual production conditions, and users must be extensively involved.
8. Prepare System Test Data and Schedule.
Prepare a test data file for each master, table, and input file used. Test data files must include all error conditions, all I/O functions, check point and restart procedures, no-data conditions, and any special requirements.
Prepare test schedule which specifies how testing will progress and when it will be completed.

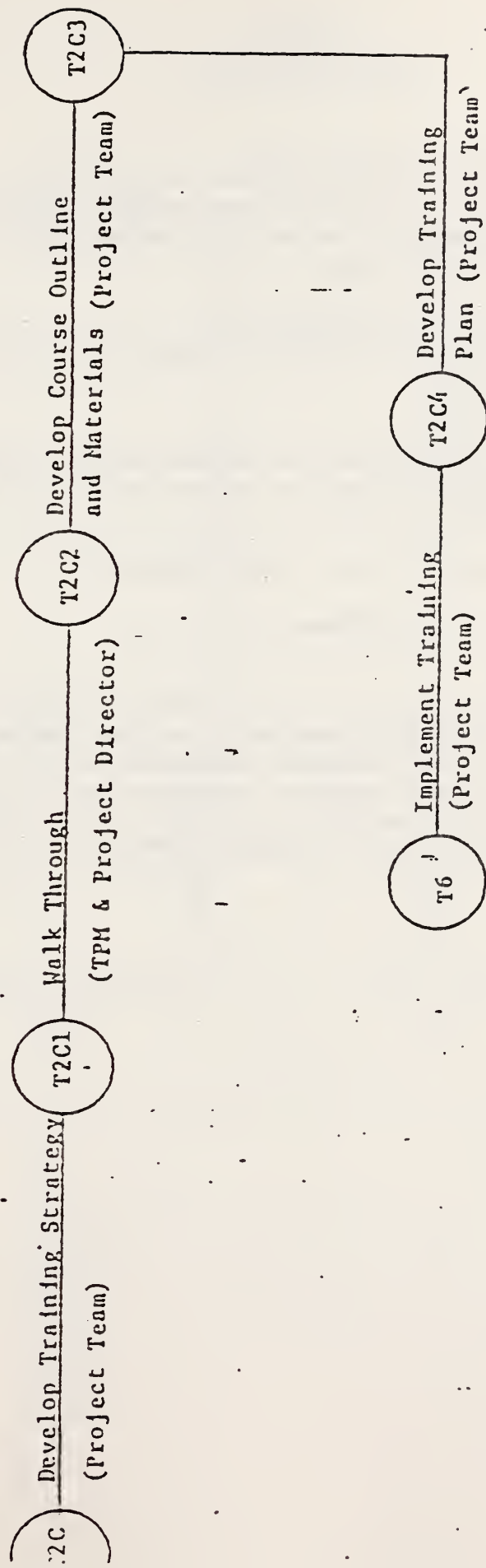
9. Develop System Test Procedures.
Prepare step by step procedures including all organizational units performing assigned tasks in sequence specified to insure the system will operate efficiently with minimal problems.
10. Conduct System Test.
Conduct total system test which very closely simulates actual production conditions.
11. Prepare System Test Documentation.
Provide a complete description of all inputs used, output generated, debugging performed, and a narrative summary of the conduct and results of the test.
12. Walk Through. (Self Explanatory).
13. Aproval. (Self Explanatory).



PHASE II
TRAINING

1. Develop Training Strategy.
The project team in coordination with applicable training personnel and other offices as may be required will design and develop strategy for training all users and interested persons in using and interacting with the system.
2. Walk Through.
Prior to further training development, a walk through of the strategy developed must be completed by the TPM, and Project Director.
3. Develop Course Outline and Materials. (Self Explanatory).
4. Develop Training Plan.
A detail plan and schedule must be prepared which reflects all immediate and planned training.
5. Implement Training. (Self Explanatory)
6. Complete Training. (Self Explanatory).

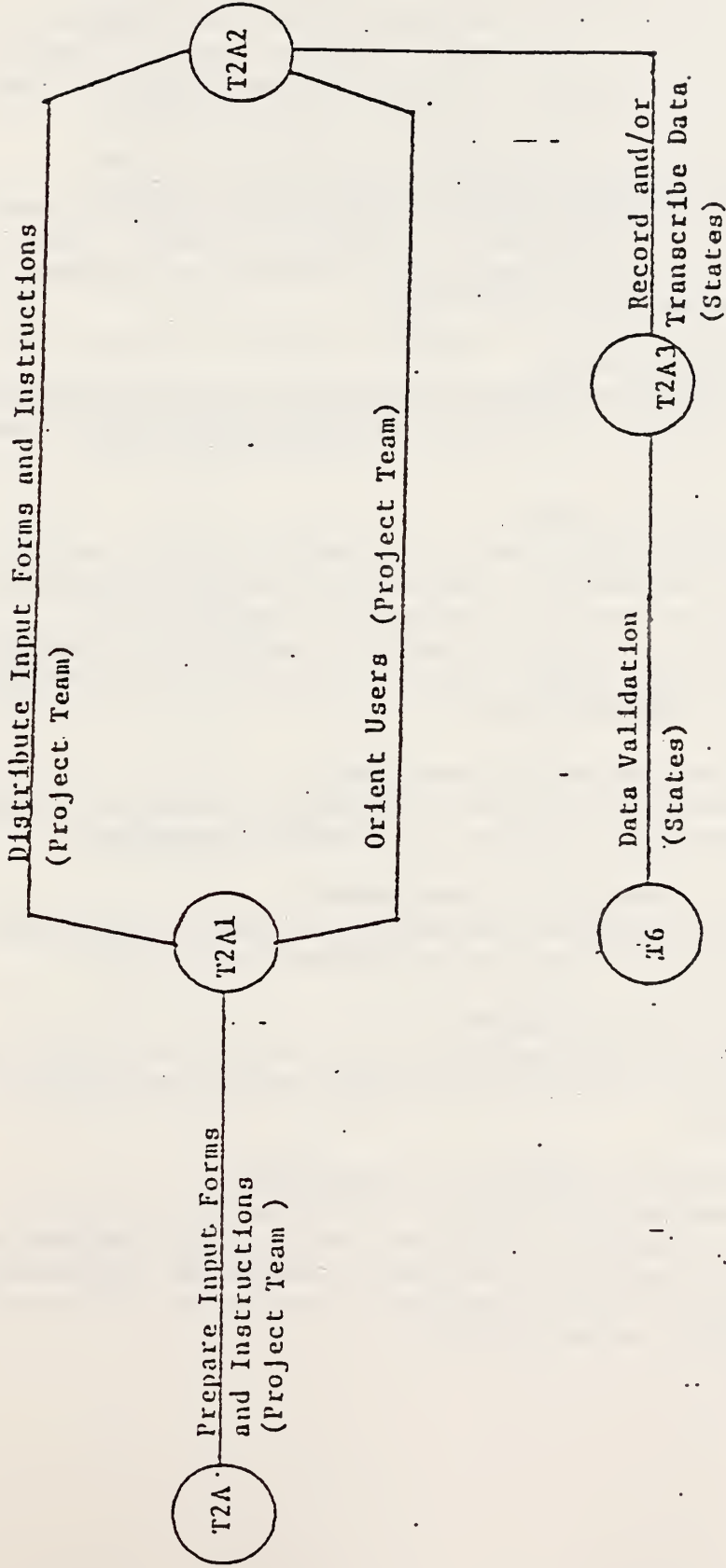
TRAINING



PHASE II
DATA COLLECTION

1. Prepare Input Forms and Instructions.
Data collection forms and instructions for their use must be developed which include all the data necessary for input to the system and which are designed to accommodate the personnel responsible for preparation, as well as data entry personnel.
2. Distribute Input Forms and Instructions.
Source documents must be distributed to all users and data collection sources.
3. Orient Users.
All personnel responsible for data recording and/or data entry must receive guidance in the proper procedures and coding required to input data to the system.
4. Record and/or Transcribe Data. (Self Explanatory).
5. User Data Entry. (Self Explanatory).
6. System Operation.
The system may operate in any of three modes: Online - direct terminal communication with computer on a time sharing basis; Remote Job Entry (RJE) - direct terminal communication with computer with processing deferred until computer resources are available; Production (Batch) - recurring processing of relatively large requirements during periods when on-line usage of computer resources is low or non-existent.

DATA COLLECTION

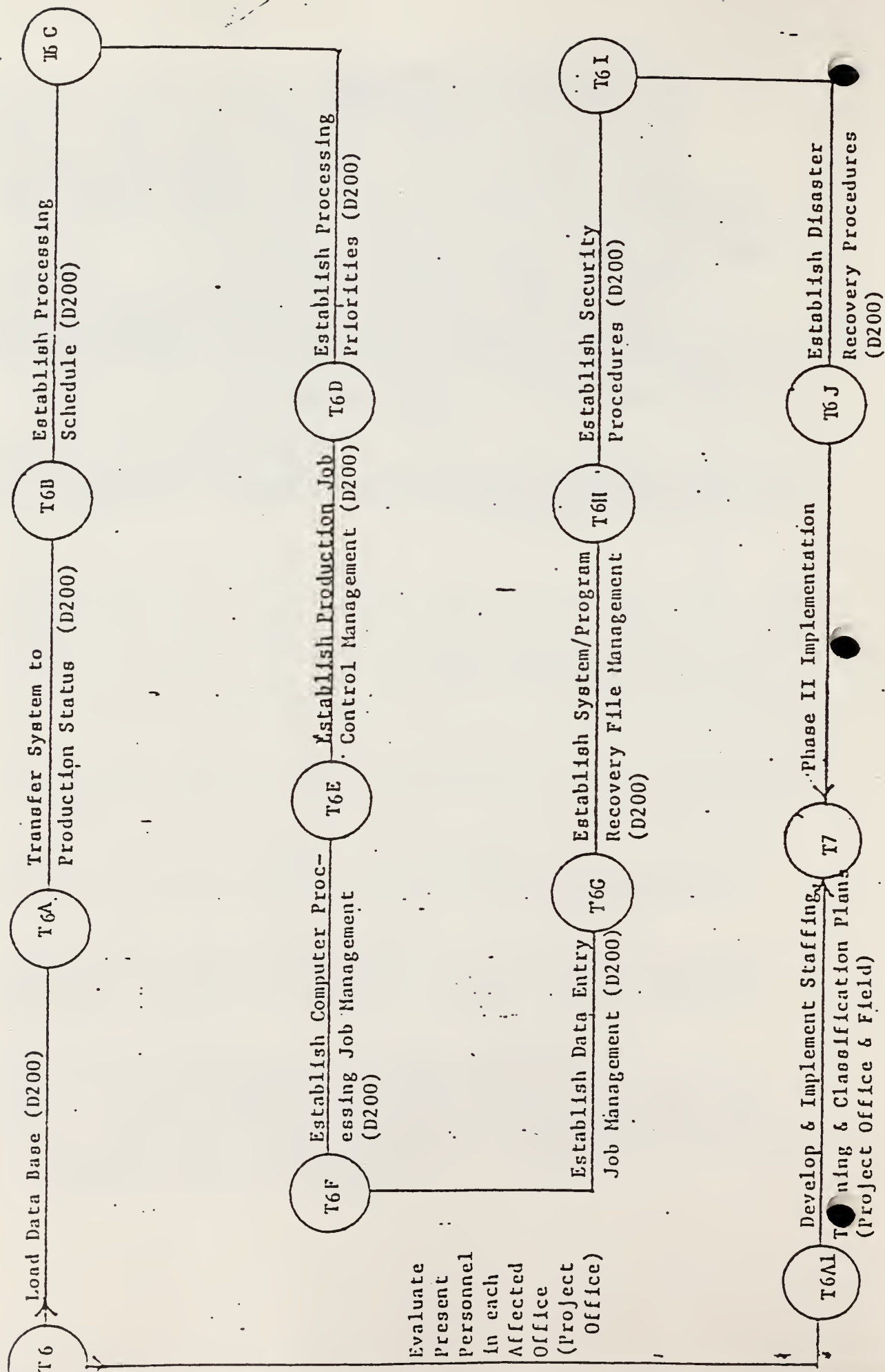


PHASE II
SYSTEM IMPLEMENTATION

1. Load Data Base.
Data loading to data base/files is accomplished upon completion of training and during the later stages of system testing. This is considered the initial load and is normally accomplished in a batch mode.
2. Transfer System to Production Status.
When the test phase is completed and approved the system/programs and its documentation are transferred to a production status. All information necessary to run the system in production is turned over to the data processing Production Control.
3. Establish Processing Schedule.
This is done in the most effective and efficient manner possible with the constraints of manpower, computer resources and other processing requirements.
4. Establish Processing Priorities.
While the goal is to provide good and reasonable service to all systems users, the workload and user expectation will sometimes exceed the capability of the system to respond in a timely and/or satisfactory manner. It therefore becomes necessary to establish operating policies which govern system utilization and allocation among various users and functions.
5. Establish Production Job Control Management.
Pre and post processing procedures specifically related to production processing, documentation required, and controls exercised.
6. Establish Computer Processing Job Management.
Computer operation procedures specifically related to production processing, documentation required and controls exercised.
7. Establish Data Entry Job Management.
Procedures outlined pertain specifically to centralized data entry. Procedures for remote decentralized terminal entry are defined in system user manuals.
8. Establish System/Program Recovery File Management.
Reprocessing of data will be provided by maintaining a backup of systems software, programs, data files, and data base programs and files. While it is possible to maintain a backup for reprocessing in a majority of cases, a complete backup to provide for all situations, for extended periods, is not feasible.

9. Establish Security Procedures.
The assessment of the security risk must take into account the administrative, technical and physical environment in which the system operates and which will become part of the overall security action plan. Physical security, information management security and computer systems security are essential and integral elements of the action plan.
10. Establish Disaster Recovery Procedures.
Disaster recovery provides the data, software, hardware, and personnel needed to produce essential outputs if the computer center has been rendered inoperative. This is accomplished through data and program backup, off premises storage, and a well developed action plan.
11. System Operation. (Self Explanatory).
12. Evaluate Present Personnel in Each Affected Office. (Self Explanatory)
13. Develop and Implement Staffing, Training, and Classification Plans. (Self Explanatory).

SYSTEM IMPLEMENTATION



PHASE II
DEVELOPMENT AND
IMPLEMENTATION IN
PILOT AND OTHER STATES

1. System and Data Base Design.
Each state office must develop and design a system and data files/sets to be used at the state level and by lower echelon organizations for daily processing functions. The state system must be compatible with and operate within the scope of the Bureau's ALMRS system.
2. Software Design and Implementation. (Self Explanatory).
3. Hardware Design and Procurement. (Self Explanatory).
4. Data Collection and Input. (Self Explanatory).
5. Test. (Self Explanatory).
6. Training. (Self Explanatory).

Pilot states for Phase II and III are Arizona and New Mexico. Remaining states should be able to adapt systems and programs developed in the pilot states in order to implement ALMRS.

PHAS DEVELOPMENT

ARIZONA & NEW MEXICO

Data Collection and Input

(Field)

System & Data Base Design

(D200 & State Office)

T2A

Software Design and Implementation

(D200 & State Office)

T2B

Test

(D200 & State Office)

T6

Hardware Design and Procurement

(Project Office, D200 & State Office)

Training

(Project Team)

PHASE II DEVELOPMENT

ALL OTHER STATES

Data Collection and Input

(Field)

Hardware Procurement (D200 & State Office)

T2B

Test

(D200 & State Office)

T6

Training

(Project Team)

PHASE II

OPERATION

Operate Hardware and Software

Maintain Hardware and Software

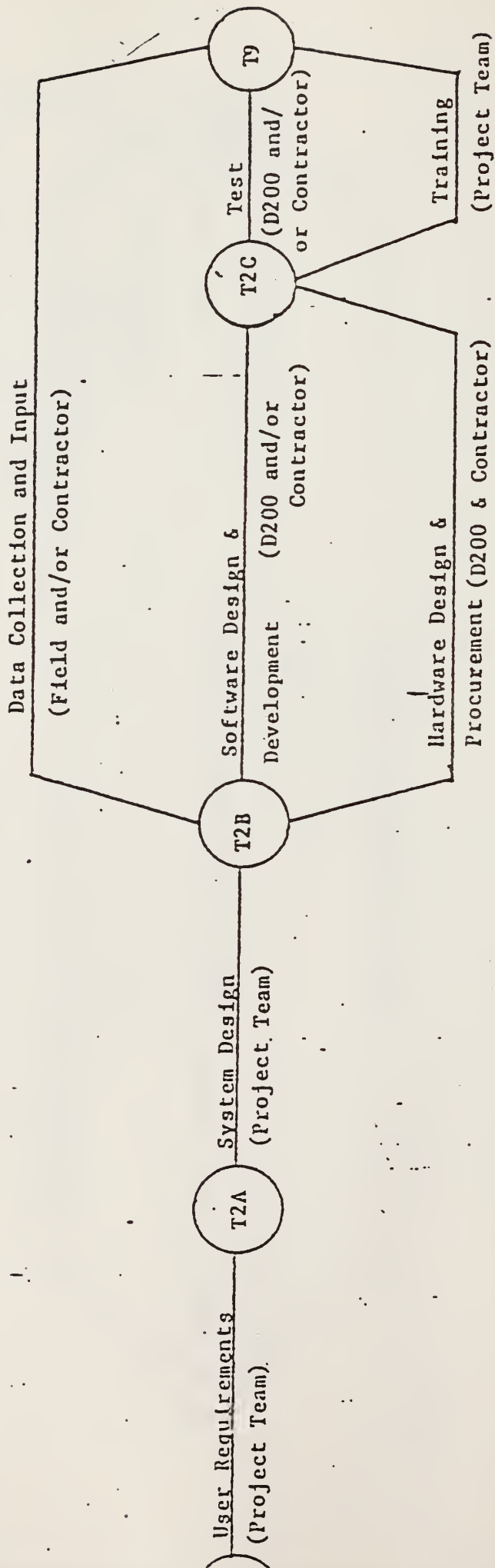
Perform Continuous Review and Update of Hardware, Software and User Requirements.

T7

T8

PHASE III

DEVELOPMENT



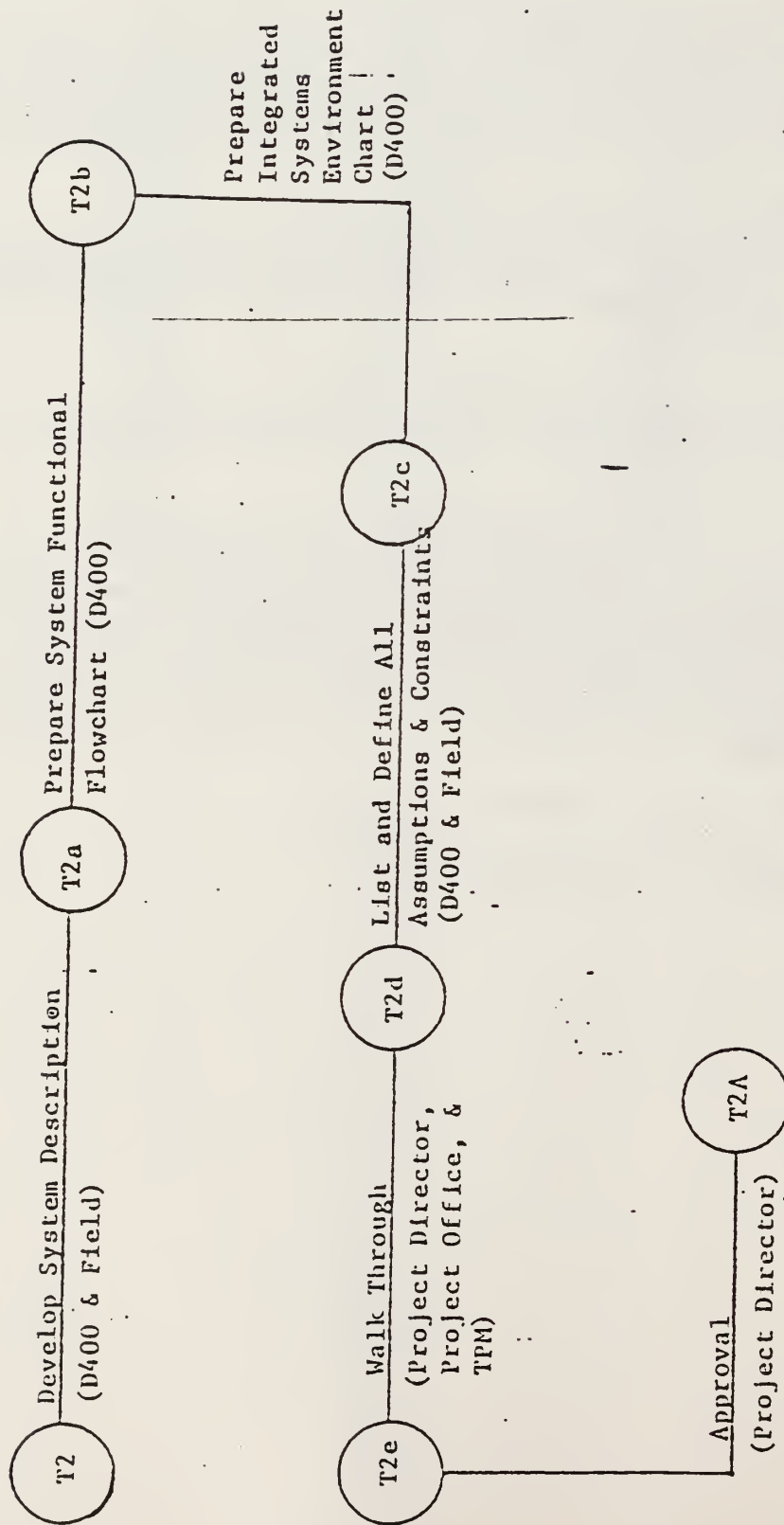
PHASE III USER REQUIREMENTS

User requirements provide a basis for mutual understanding between users and designers of the initial definition of the requirements, operating environments, development plan and data collection requirements.

1. Develop System Description.
The system description includes a narrative outlining purpose, scope and authorization of the system, description of all inputs and outputs, interface with other existing or planned systems, and an explanation of the system modifications or extension if appropriate.
2. Prepare System Functional Flowchart.
Graphically portrays the informational flow of the system identifying all functions, processes, procedures, and organizations. Large scale or complex systems may require several flowcharts constructed at various levels.
3. Prepare Integrated Systems Environment Chart.
Shows existing and/or proposed interfaces with other manual or automated systems.
4. List and Define all Assumptions and Constraints.
A list is prepared which identifies all conditions that cannot be supported by factual information and which spell out those circumstances or limitations upon which the system must depend. Include reference to schedule constraints upon inputs and outputs, identifying files/data sets, and/or recurring processing which must be performed either prior to, or as a result of the operation of the system.
5. Walk Through. (Self Explanatory).
6. Approval. (Self Explanatory).

PHASE I--

USER REQUIREMENTS



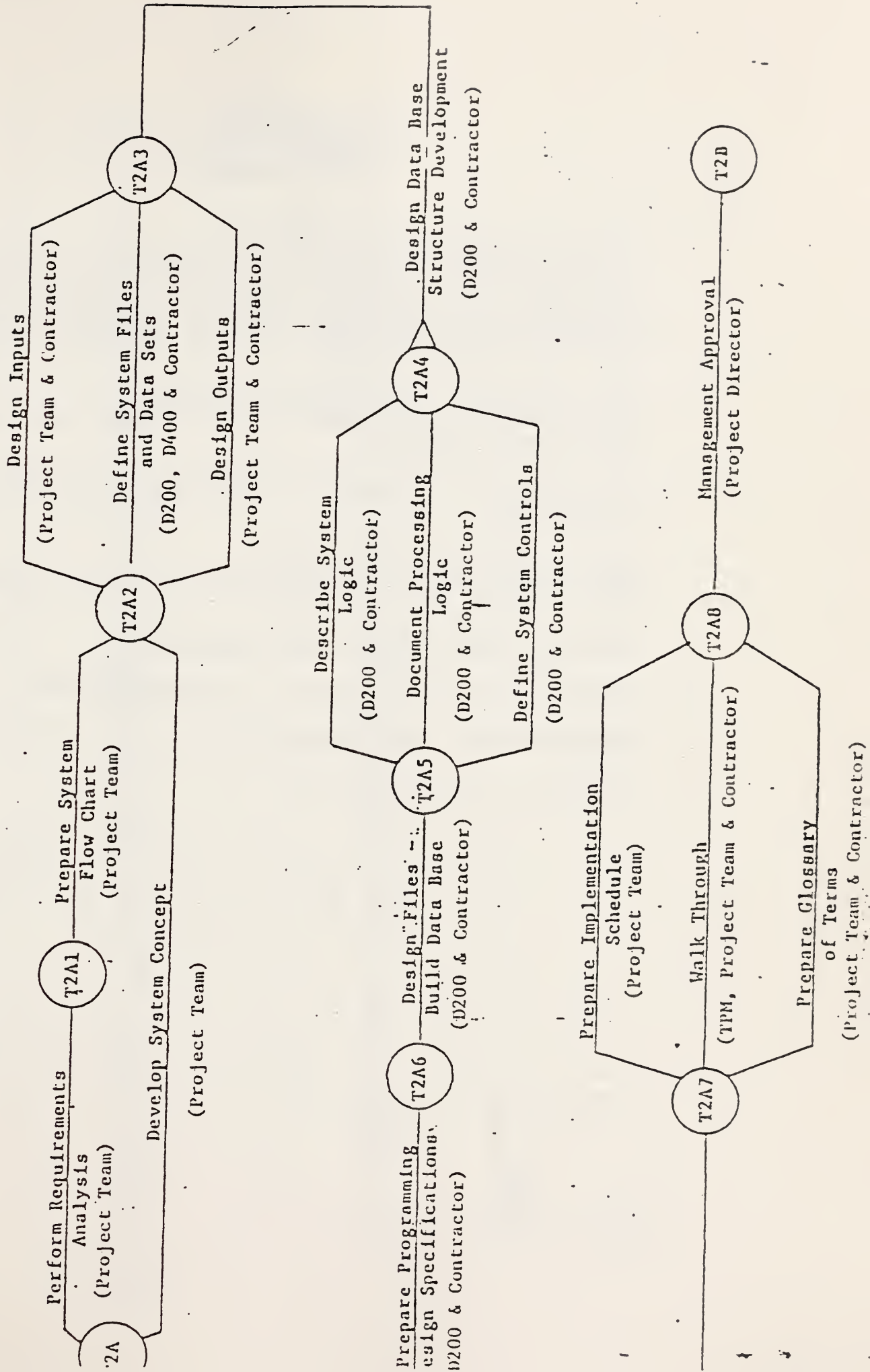
PHASE III
SYSTEM DESIGN

1. Perform Requirements Analysis.
Determine feasibility of the user's requirements by thoroughly studying the user's system specifications, analyzing all elements of the system to assure understanding and ADP applicability. Discuss those elements which need clarification, modification, or which cannot be accomplished as requested.
2. Develop System Concept.
Develop a detailed narrative description of the functions, processes, procedures, and organization of the system, showing all actions and interactions within the system interfaces with other systems.
3. Prepare System Flow Chart.
Graphically portray the details of all functions, processes, procedures, and organizations of the system. Depending upon the complexity and scope of the system, more than one flowchart may be required for various levels.
4. Design Inputs.
Inputs designed may be source documents, transmittals, punched cards, paper tape, remote terminal messages, data sets/files on magnetic tape/disk, etc.
5. Design Outputs.
Outputs may be printed reports, punched cards, visual display, audio responses, magnetic tape/disk, paper tape, etc.
6. Define System Files and Data Sets.
Describe each internal output file/data set with respect to purpose, function, and relationship to other system outputs. Files and data sets are utilized internally by the system.
7. Develop Data Base Structure.
A data base provides the means to connect data elements in such a manner that it is possible to selectively access one or more elements while simultaneously eliminating data redundancy and I/O processing of elements that are irrelevant to the task at hand.
8. Describe System Logic.
Describe the methods and procedures required by the system defining and documenting all edits, conditions, logical relationships, techniques, etc. Graphic illustrations, charts, formulas, etc., should be used when necessary.

9. Define System Controls.
Identify and define, in detail, the checking, balancing, or other control procedures used by user organizations to maintain the validity of the system. Also describe, in detail, the internal processing controls required by the system including methods to provide audit trails.
10. Document Processing Logic.
Describe computer processing logic which includes functional flowcharts, complete program descriptions and interrelationships, and detail plans or program for data file/set conversions required for parallel processing or final production implementation.
11. Design Files.
Consider type of file best suited to the requested application, i.e., data base, flat file, or cluster file. Define all aspects of the data, thoroughly understanding each data element. As a minimum the following factors must be considered: storage space required, timeliness of inquiry response, speed of access, maintenance, mobility, data redundancy, and user communication.
12. Prepare Programming Design Specification.
All functional program requirements should be identified including the organizational plan for each program, program description, flowcharts, sub-program or routine descriptions, and disaster recovery procedures.
13. Prepare Implementation Schedule.
Specify due dates for system implementation, data input, and data output. Also show estimated dates for completion of the Operational Manual (Run Book), Program Maintenance Manual, and User's Manual (Guide).
14. Prepare Glossary of Terms.
List all technical terms, words, phrases, and abbreviations requiring further explanation and definition. Also prepare all data elements and codes for inclusion in the Data Element Dictionary (DED).
15. Walk Through. (Self Explanatory.)
16. Approval. (Self Explanatory.)

PHASE III

SYSTEM DESIGN

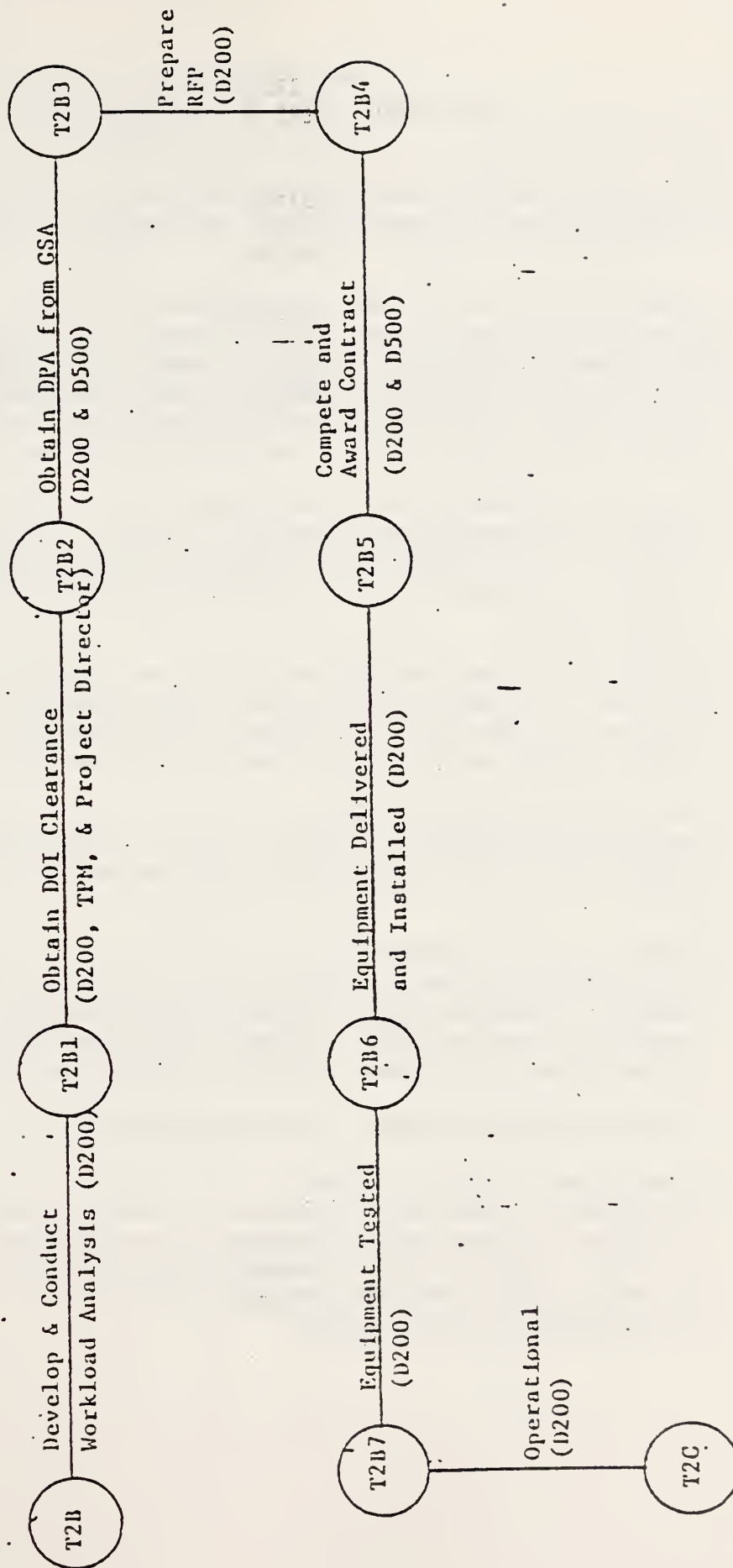


PHASE III
HARDWARE DESIGN
AND PROCUREMENT

1. Develop and Conduct Workload Analysis.
The data processing organization is responsible for translating user requirements, data base/files design, and programming design specifications into a workload analysis which results in determination of required procurement documentation and strategies necessary to support the proposed system.
2. Obtain Department of Interior (DOI) Clearance.
Prior to release of RFP, approval must be obtained from the appropriate DOI office(s).
3. Obtain Delegation of Procurement Authority (DPA) from GSA.
By regulation.
4. Prepare Request for Proposal (RFP).
Based upon the information derived from the workload analysis, an RFP must be prepared for solicitation.
5. Compete and Award Contract. (Self Explanatory).
6. Equipment Delivered and Installed. (Self Explanatory).
7. Equipment Tested. (Self Explanatory).
8. Operational. (Self Explanatory).

PHASE III

HARDWARE DESIGN & PROCUREMENT



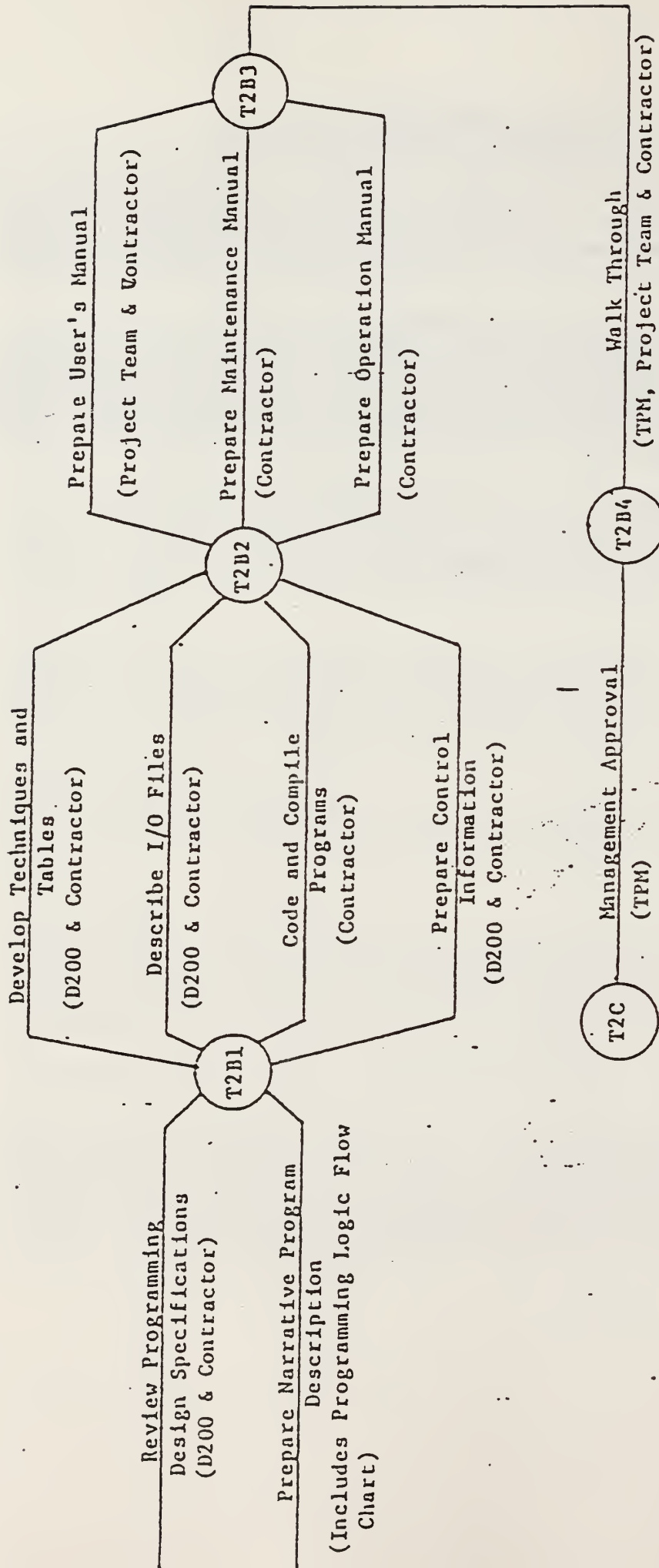
PHASE III
SOFTWARE DESIGN AND IMPLEMENTATION

1. Review Programming Design Specifications.
Programmer reviews specifications and discusses with analyst resolving any misunderstanding or differences of opinion.
2. Prepare Narrative Program Description.
Briefly describe, in non-technical terms, the program's major functions, procedures, special features, and equipment requirements. Show system name, program name and number, analyst and programmer names, forms of input and output expected, objectives of program, etc. Explain any tables, if used, and indicate system controls.
3. Prepare Programming Logic Flow Chart.
Diagram the sequence of operations and decisions performed by the computer. Each symbol must describe a single program instruction, process, function, or stand alone procedure and must precisely follow program logic.
4. Develop Techniques and Tables (as may be required).
Used only for complex programs with specialized requirements for such items as complex table structures, special search techniques, randomizing formulae, special access formulae, etc.
5. Describe Input/Output Files.
Specify standard label formats, the data organization for each input/output file, applicable sorting sequence in major to minor order.
6. Prepare Control Information.
Controls are a series of explanatory paragraphs defining how program controls imposed on inputs and/or outputs operate, including such controls as record counts, accumulated counts, batch controls, data transmission in, through, and out of the system, etc.
7. Code and Compile Programs. (Self Explanatory.)
8. Prepare User's Manual (Guide).
The purpose of the user's guide is to sufficiently describe the functions performed by the software in non-ADP terminology such that the user organization can determine its applicability and when and how to use it. It serves as a reference document for preparation of input data, parameters, and results.

9. Prepare Operations Manual (Run Book).
The Operations Manual provides instructions to be used by operating personnel in scheduling, setting up, and running a given job. The manual specifically defines processing functions and responsibilities with respect to programs and control procedures. The manual generally describes one production job stream which usually includes more than one program.
10. Prepare Program Maintenance Manual.
The Program Maintenance Manual provides the maintenance programmer with information necessary to understand the programs, their operating environment, and their maintenance procedures. The manual describes one production job stream which usually includes more than one program.
11. Walk Through. (Self Explanatory.)
12. Approval. (Self Explanatory.)

PHASE III

SOFTWARE DESIGN AND IMPLEMENTATION



PHASE III
TEST

1. Prepare Static Test Plan.
Develop a test plan for checking programs or program segments as appropriate. These test are conducted by the programmer during program development.
2. Perform Pre-Test Desk Checks.
Checks are made for initialization logic, termination logic, file handling logic, report generation and processing logic to reduce the likelihood of abnormal termination.
3. Prepare Static Program Test Data.
Develop test data to set up sample transactions, test files and/or data bases, that will adequately test the program. Use sufficient data to assure all portions of the program are tested.
4. Conduct Static Program Test.
Each program written will be tested by the programmer upon completion of coding and syntax free compilation to assure functioning according to specifications. Test all program input types, generate all output types, and execute every line of program code.
5. Prepare Static Test Documentation.
Describe all test data used, each input media used, each output product generated, and a summary narrative of the results including a brief description of any debugging performed.
6. Develop System Performance Criteria.
Specify acceptable limits or error ratios which serve as quality control specification for all conditions in the system including control, processing, and output test criteria.
7. Develop System Test Plan.
When all programs within a system have been individually tested a plan for conducting a system test is developed. The system test re-tests all program logic, inputs, outputs, cycling capability, and validity of system interfaces. The system test must closely simulate actual production conditions, and users must be extensively involved.
8. Prepare System Test Data and Schedule.
Prepare a test data file for each master, table, and input file used. Test data files must include all error conditions, all I/O functions, check point and restart procedures, no-data conditions, and any special requirements.
Prepare test schedule which specifies how testing will progress and when it will be completed.

9. Develop System Test Procedures.
Prepare step by step procedures including all organizational units performing assigned tasks in sequence specified to insure the system will operate efficiently with minimal problems.
10. Conduct System Test.
Conduct total system test which very closely simulates actual production conditions.
11. Prepare System Test Documentation.
Provide a complete description of all inputs used, outputs generated, debugging performed, and a narrative summary of the conduct and results of the test.
12. Walk Through. (Self Explanatory.)
13. Approval. (Self Explanatory.)

Prepare Program Test Plan

(D200 & Contractor)

T2C

Perform Pre-Test Desk Check

(D200 & Contractor)

T2C1

Conduct Static Program Test

(Contractor)

T2C2

Develop Static Test

Documentation
(Contractor)

T2C3

Prepare Static Program Test Data

(D200 & Contractor)

Prepare System Test Data

(D200 & Contractor)

T2C4

Develop Performance Criteria

(D200 & Contractor)

Develop System Test

Procedure

(Contractor)

T2C6

Prepare System Test Schedule

(D200, D400 & Contractor)

T2C5

Develop System Test Plan

(D200, D400 & Contractor)

Conduct System Test

(D200, D400 & Contractor)

T2C8

Prepare System Test

Documentation (D200 & Contractor)

T2C9

Walk Through

(D200, TPN, & Project Team)

T2C10

Approval

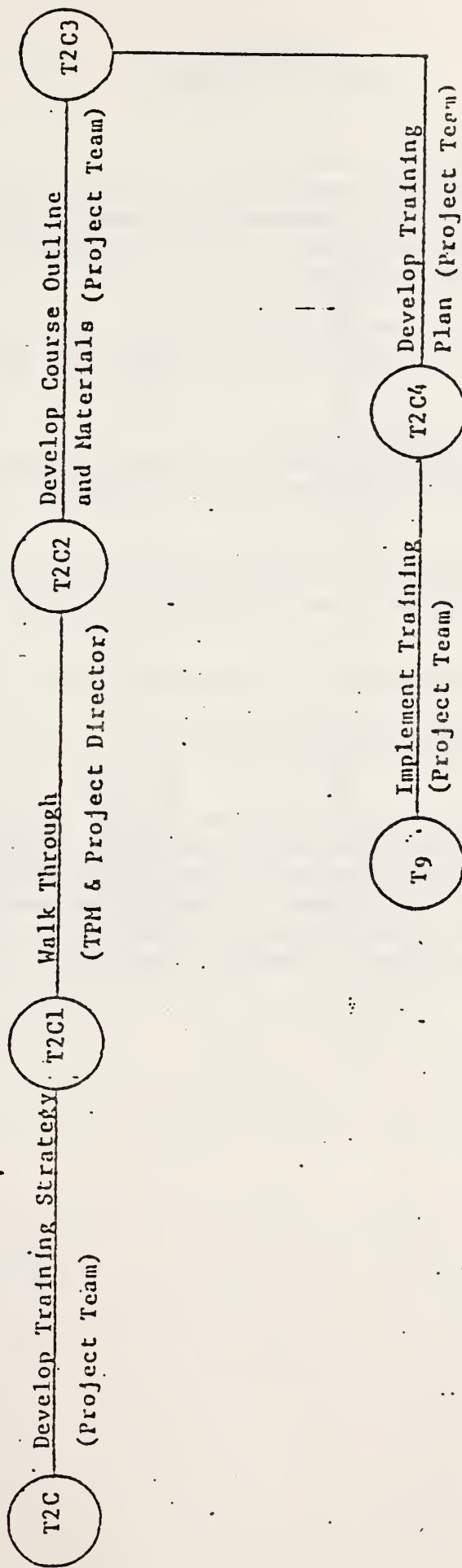
(TPN & Project Director)

T9

PHASE III
TRAINING

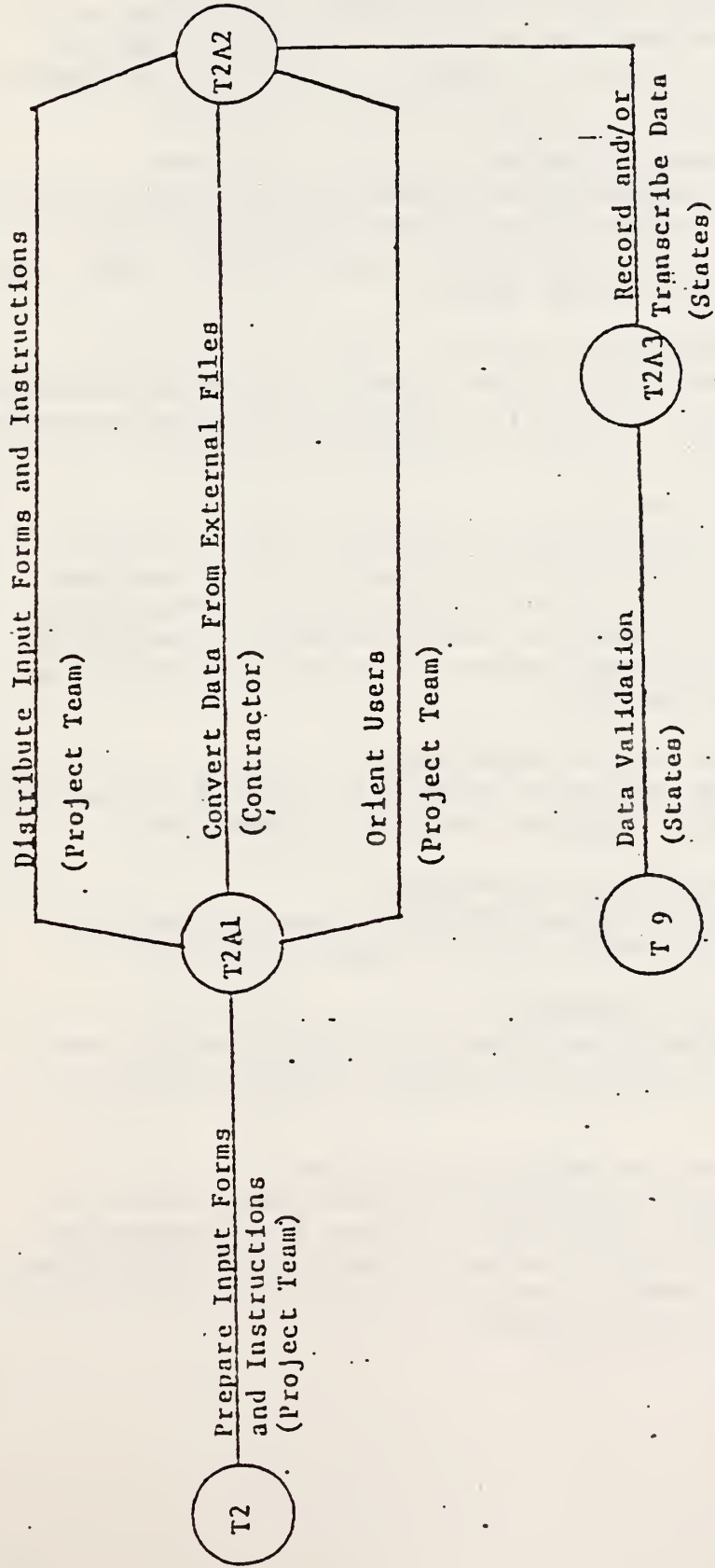
1. Develop Training Strategy.
The project team, in coordination with applicable training personnel and other offices as may be required, will design and develop strategy for training all users and interested persons in using and interacting with the system.
2. Walk Through.
Prior to further training development, a walk through of the strategy developed must be completed by the TPM and Project Director.
3. Develop Course Outline and Materials. (Self Explanatory).
4. Develop Training Plan.
A detail plan and schedule must be prepared which reflects all immediate and planned training.
5. Implement Training. (Self Explanatory).
6. Complete Training. (Self Explanatory).

TRAINING



PHASE III
DATA COLLECTION

1. Prepare Input Forms and Instructions.
Data collection forms and instructions for their use must be developed which include all the data necessary for input to the system and which are designed to accommodate the personnel responsible for preparation, as well as data entry personnel.
2. Distribute Input Forms and Instructions.
Source documents must be distributed to all users and data collection sources.
3. Convert Data from External Files.
Data obtained from external manual or automated systems must be converted to system requirements prior to loading to data base/files.
4. Orient Users.
All personnel responsible for data recording and/or data entry must receive guidance in the proper procedures and coding required to input data to the system.
5. Record and/or Transcribe Data. (Self Explanatory).
6. User Data Entry. (Self Explanatory).
7. System Operation.
The system may operate in any of three modes: On-Line - direct terminal communication with computer on a time sharing basis; Remote Job Entry (RJE) - direct terminal communication with computer with processing deferred until computer resources are available; Production (Batch) - recurring processing of relatively large requirements during periods when on-line usage of computer resources is low or non-existent.



PHASE III
SYSTEM IMPLEMENTATION

1. Load Data Base.
Data loading to data base/files is accomplished upon completion of training and during the later stages of system testing. This is considered the initial load and is normally accomplished in a batch mode.
2. Transfer System to Production Status.
When the test phase is completed and approved the system/programs and its documentation are transferred to a production status. All information necessary to run the system in production is turned over to the data processing Production Control.
3. Establish Processing Schedule.
This is done in the most effective and efficient manner possible with the constraints of manpower, computer resources, and other processing requirements.
4. Establish Processing Priorities.
While the goal is to provide good and reasonable service to all systems users, the workload and user expectations will sometimes exceed the capability of the system to respond in a timely and/or satisfactory manner. It therefore becomes necessary to establish operating policies which govern system utilization and allocation among various users and functions.
5. Establish Production Job Control Management.
Pre and post processing procedures specifically related to production processing, documentation required, and controls exercised.
6. Establish Computer Processing Job Management.
Computer operation procedures specifically related to production processing, documentation required and controls exercised.
7. Establish Data Entry Job Management.
Procedures outlined pertain specifically to centralized data entry. Procedures for remote decentralized terminal entry are defined in system user manuals.
8. Establish System/Program Recovery File Management.
Reprocessing of data will be provided by maintaining a backup of system software, programs, data files, and data base programs and files. While it is possible to maintain a backup for reprocessing in a majority of cases, a complete backup to provide for all situations, for extended periods, is not feasible.

9. Establish Security Procedures.

The assessment of the security risk must take into account the administrative, technical, and physical environments in which the system operates and which will become part of the overall security action plan. Physical security, information management security and computer systems security are essential and integral elements of the action plan.

10. Establish Disaster Recovery Procedures.

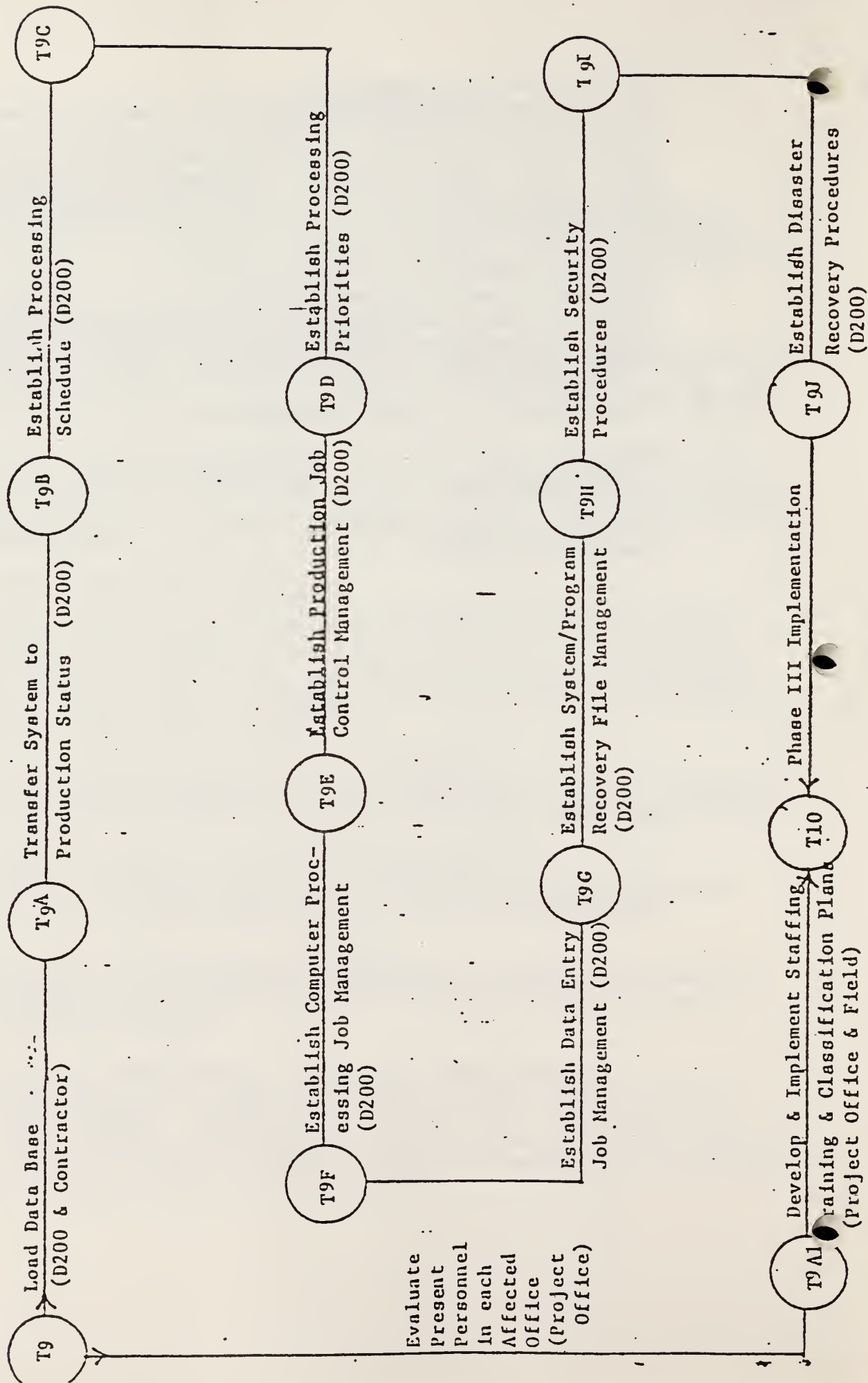
Disaster recovery provides the data, software, hardware, and personnel needed to produce essential outputs if the computer center has been rendered inoperative. This is accomplished through data and program backup, off premises storage, and a well developed action plan.

11. System Operation. (Self Explanatory).

12. Evaluate Present Personnel in Each Affected Office.
(Self Explanatory).

13. Develop and Implement Staffing, Training and Classification Plans.
(Self Explanatory).

SYSTEM IMPLEMENTATION



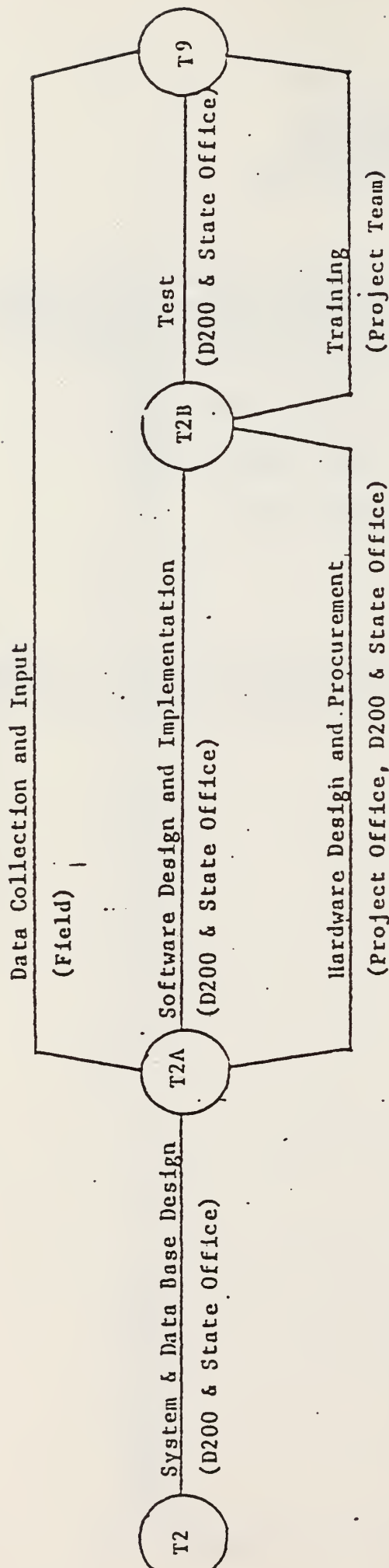
DEVELOPMENT AND
IMPLEMENTATION IN
PILOT AND OTHER STATES

1. System and Data Base Design.
Each state office must develop and design a system and data files/sets to be used at the state level and by lower echelon organizations for daily processing functions. The state system must be compatible with and operate within the scope of the Bureau's ALMRS system.
2. Software Design and Implementation. (Self Explanatory).
3. Hardware Design and Procurement. (Self Explanatory).
4. Data Collection and Input. (Self Explanatory)..
5. Test. (Self Explanatory).
6. Training. (Self Explanatory).

Pilot states for Phases II and III are Arizona and New Mexico. Remaining states should be able to adapt systems and programs developed in the pilot states in order to implement ALMRS.

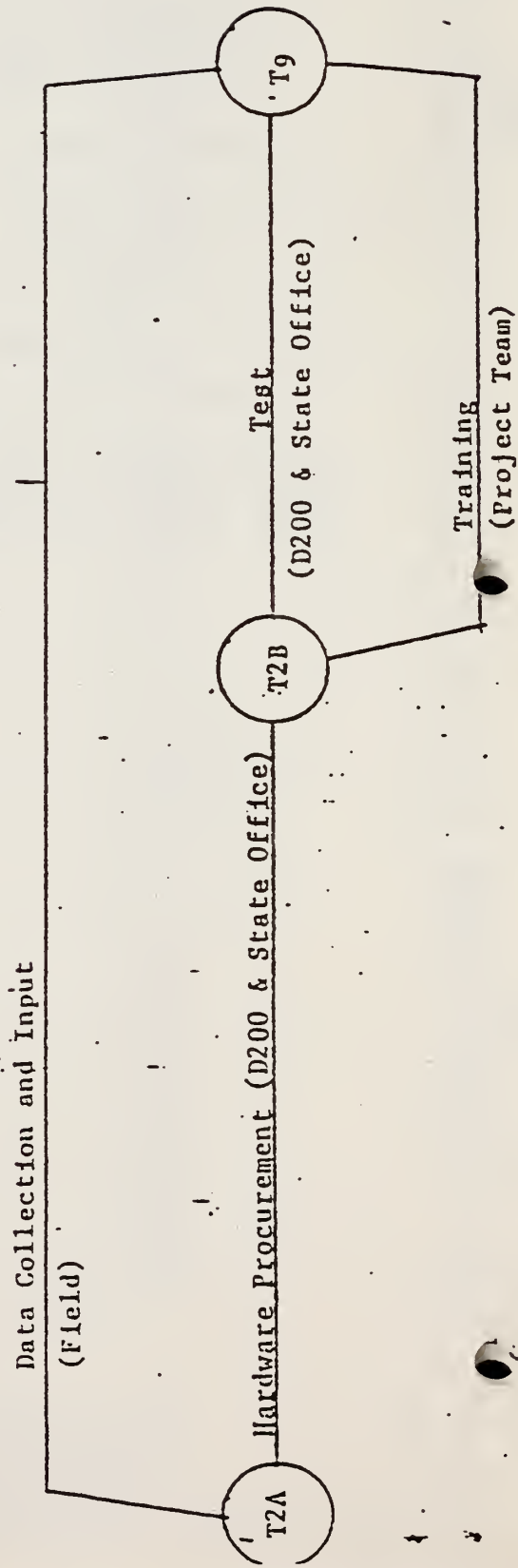
PHASE III DEVELOPMENT

ARIZONA & NEW MEXICO



PHASE II DEVELOPMENT

ALL OTHER STATES

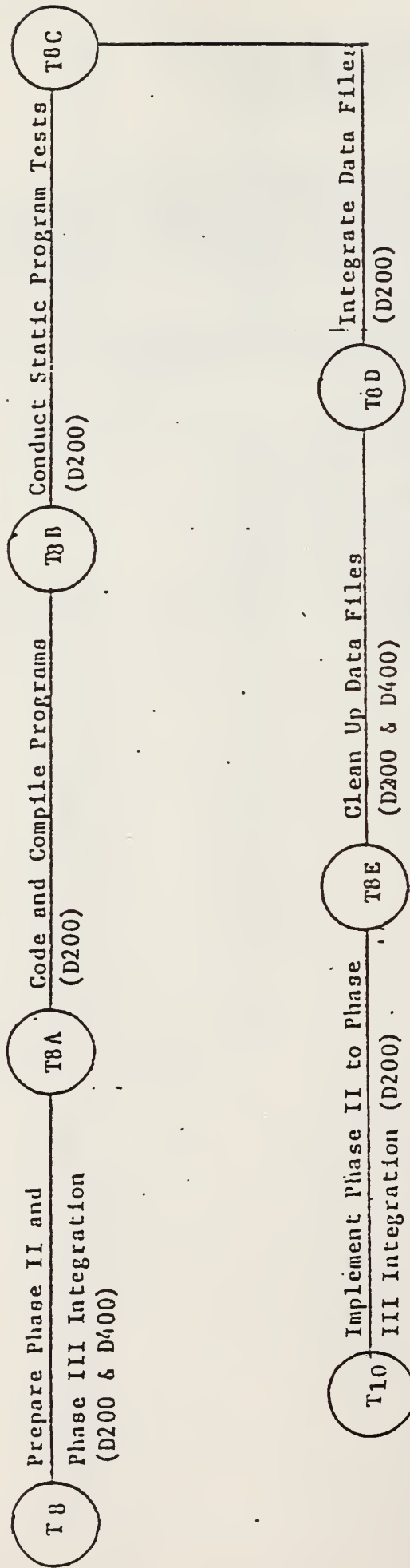


PHASE II AND PHASE III
INTEGRATION

1. Prepare Phase II and Phase III Integration Plan.
This plan must include as a minimum programs required, file conversions/integration required, file clean up required and a complete description of how the integration will be accomplished.
2. Code and Compile Programs. _ _
Computer programs necessary to perform integration of the Phase I and Phase II systems must be written and compiled.
3. Conduct Static Program Tests.
All programs must be tested prior to use in integration process.
4. Integrate Data Files (Self Explanatory).
5. Clean Up Data Files. (Self Explanatory).
6. Implement Phase II to Phase III Integration. (Self Explanatory).

PHASE II AND PHASE III

INTEGRATION



PHASE III

OPERATION

Operate Hardware and Software

Maintain Hardware and Software

Perform Continuous Review and Update of Hardware, Software and User Req'ts.

T11

T10

